

About the Standby Rate Estimator

Introduction

To further encourage the use of combined heat and power ("CHP") in New York State, the New York State Energy Research and Development Authority ("NYSERDA") has contracted with the Pace Energy and Climate Center to develop a Standby Rate Estimator ("Estimator") and Standby Rate Manual ("Manual") to help businesses analyze the energy bill impacts of deploying an onsite CHP system. CHP, which utilizes both the heat and electric power output from small generation systems situated on an energy user's premises, dramatically improves energy and environmental performance over traditional electricity supply approaches consisting of central station generating plants and transmission and distribution systems. Economic benefits include paybacks that in some cases can be as short as two years, improved power quality and improved reliability. The environmental importance of CHP is made evident by the fact that total system efficiencies can reach 80% and more in contrast to usual power plant efficiency of about 30%. Each unit of fossil fuel input can be employed for useful cooling, heating and power with only a fraction of the waste and resulting pollution inherent in separately provided cooling, heating and power configurations. Responding to the benefits of CHP, businesses are increasingly investigating the feasibility of building their own CHP systems.

Because a CHP system generally cannot meet the entire electric needs of a facility due to insufficient electric capacity, scheduled maintenance shutdowns or unscheduled outages, developers of CHP systems must provide for back-up or supplemental power supply. Basically there are two alternative means to provide for backup generation capacity (1). One alternative is to build sufficient redundant capacity such that if one generating unit cannot operate, another will be available to take its place. The problem with this approach is that it is very costly; the redundant capacity will rarely be used and since the capital costs must be spread over relatively few kWh the cost per kWh will be very high. For the same reason developers generally do not build sufficient capacity to meet peak load, since the increment of capacity designed solely to meet peak demand will rarely be used.

The second alternative is to rely upon the local distribution utility to serve the balance of the customer's electric needs, and to pay what are called standby rates to make sure that the utility has capacity available when needed. Standby rates are the charges levied by the local utility for supplemental, backup and maintenance power provided to customers utilizing CHP and other distributed generation ("DG") plants (2).

The New York Public Service Commission ("Commission") has approved standby rates for all of the State's major electric distribution utilities applicable to customers utilizing CHP (3). As discussed in more detail below, the standby rates collect the costs of providing standby service on a per kW basis through "as-used demand" charges and "contract demand" charges as opposed to through per kWh charges reflecting energy consumption. The Commission recognized that depending upon their load patterns some customers would pay higher electric charges under the standby rates than under their otherwise applicable rates and, therefore, provided for an optional phase-in of the standby rates. For the major electric distribution utilities other than National Grid, whose standby rates had been previously determined by the Commission, the Commission also provided an optional exemption from the standby rates for certain on-site generation using an "eligible designated technology" defined as including fuels cells, wind, solar thermal, photovoltaics, sustainably-managed biomass, tidal, geothermal, methane waste and CHP systems of less than 1 MW that meet certain efficiency and environmental criteria (4). In order to be eligible for the designated technology exemption, the on-site generation must enter service by May 31, 2006, (though the Commission is currently considering an extension of this deadline).

Under certain circumstances standby rates can result in significantly higher utility bills than the otherwise applicable rates and can, in fact, be determinative of the economic viability of CHP projects. The benefits to a customer of using on-site generation instead of paying its local utility for energy may be considerably diminished, however; when the customer pays to generate its own energy on-site and also has to pay, at the same time, the utility for standing ready to provide that same power. Complicating the problem for developers of potential CHP systems, standby rates are complex and it is difficult to accurately estimate the standby rates that will be incurred if a CHP system is built. The inability to determine standby charges quickly, accurately and inexpensively could be a major decision barrier for owners and facility managers of smaller customers, a serious problem since small commercial and institutional facilities constitute the majority of the remaining technical potential for CHP in New York State (5).

About This Manual and Estimator

Responding to the needs for transparency and for easily accessible and understandable information about possible standby charges, this Manual describes a new web-accessible and interactive Standby Rate Estimator that makes it possible for users to estimate the standby charges that would be incurred if a CHP system were built. It also allows users to see whether the Standby Tariff will result in total charges in excess of the charges they would incur under otherwise applicable rates. In addition, users are able to compare the delivery charges (total bills without commodity charges) they would be billed under the Standby Tariff to those they would incur under otherwise applicable rates. In certain cases, described in this Manual, a user might be able to obtain an exemption from the Standby Tariff and the Estimator will help the user determine whether to seek such an exemption. In addition, the standby charge derived through use of the Estimator can be input into already available programs that analyze the economics of installing a CHP system to obtain a more complete analysis than would otherwise be possible.

This Manual begins with an introduction to standby rates. It includes a discussion of the rationale for the rates, a description of their impact on customers and a summary description of tariff mechanics. The Manual next provides an introduction to the Estimator, describing its purpose; necessary inputs and where to find them; inevitable uncertainties when using the Estimator; and a walk-through example of how to take advantage of the Estimator. The Manual concludes with a glossary of terms, a compendium of links to utility standby tariffs for all New York State distribution companies and contact information for each of the distribution companies.

Both the Estimator and the Manual focus on Consolidated Edison at this time, with revised versions of both the Estimator and the Manual planned to include the recently revised National Grid standby tariff.

Standby Rates

Background and Rationale

Standby rates are tariffs designed to recover the costs incurred by electric distribution utilities to provide service to those customers that use a utility's transmission and distribution system for only a portion of their electric energy requirements. They recover the costs of standby service, which includes:

- *backup service* in case a customer's on-site generation is not operational for some reason and the customer must return to utility service;
- *maintenance service* in case the customer must return to utility service during routine testing and upkeep of the CHP system; and
- *supplemental service* which provides the difference between a customer's total load and its installed on-site generation.

For ratemaking purposes in New York, there is no recognized distinction between these three situations in which the customer may require partial service from the utility.

In order to provide standby and supplemental service, utilities must invest in sufficient distribution and transmission capacity to provide power to standby rate customers when that power is requested. In addition, the utility or another energy supplier must have sufficient generating capacity available to meet the customer's request for power. The distribution and transmission capacity must be appropriately sized to meet the maximum demand that the customer is expected to impose on the utility system.

Since the investment necessary to provide standby service is determined by the maximum demand imposed by a particular customer on the system, rather than by the amount of energy used over the course of a month (or other billing period), the Commission has determined that standby rates should recover the cost of service through per kilowatt (kW) "fixed" demand charges rather than per kilowatt-hour (kWh) volumetric charges based upon energy consumption.

Under standby rate guidelines established in 2001, New York utilities recover the cost of standby service through three distinct charges: *customer charges*, *contract demand charges*, and *daily as used demand charges*.

The **customer charge** is designed to recover certain fixed costs, costs that do not vary with energy use or demand, such as metering expenses and administrative costs. The customer charge shows up on the customer's bill as a fixed monthly charge. Every customer in a given rate class pays the same customer charge, regardless of the site's electric load or usage.

The **contract demand charge** by contrast, varies according to total site demand, to reflect the fact that utility investment is positively correlated with customer demand. Contract demand represents a customer's maximum potential demand. Customers pay the contract demand regardless of whether their actual demand approaches this level. (In this way, the contract demand charge is a lot like a "bucket" of minutes on a mobile phone contract - you pay this charge whether or not you use the minutes.) As explained in Opinion No. 01-4, "contract demand charges are the more appropriate vehicle for recovering charges that are relatively specific to the individual customer, in the sense that the utility incurs such costs to provide "local" transmission and distribution facilities necessitated by that customer's peak demand..." (6)

The **daily as-used demand charge** also varies by usage, but the charge is assessed based upon the customer's actual metered demand (in kW) during peak-hour periods. Although some standard service classes are subject to demand charges for use at night, the daily as-used demand charges do not reflect night-time use. As explained by the Commission, "As-used demand charges, on the other hand, are the preferred means of cost recovery for facilities that are needed to meet system peaks and therefore are "shared" among numerous customers rather than "local" to the individual customer."

Unresolved Issues

Standby rates for Con Edison were set by the Commission following lengthy negotiations and litigation over the term of a settlement proposal submitted by some of the parties in the utility's standby rate case. A similar process occurred for the other major electric distribution utilities in the state, with the result that all of the utilities have fairly similar standby rates. However, development of standby rates for National Grid predated the standby rate cases of the other utilities and the National Grid rates differ from the other utilities in important respects. Significant changes to National Grid's rates were approved by the Commission on April 28, 2006.

Standby rate design remains a controversial and hotly debated issue in New York State, and indeed across the country. Important questions remain as to the proper allocation of costs between the contract demand charge and the daily as-used demand charge, whether it is

appropriate to recover supplemental service together with standby service and whether the standby rates properly recognize the benefits CHP provides to system reliability, diversity of supply and the ability to avoid investment in otherwise necessary distribution, transmission and generation plant. The scope of this Manual is limited to understanding the implications of the existing standby rates for potential CHP systems; it does not attempt to explore the intricacies of standby rate design.

Impact on Customers

How will standby rates affect my bill?

The impact of standby rates on customers will depend upon the specific customer's load profile. High-load factor customers (i.e., those whose demand is relatively flat and whose average demand is a high percentage of their peak demand), may benefit from standby rates since they do not have demand spikes that would incur high contract demand charges relative to typical daily demands. Furthermore, their high energy usage would result in much higher bills if standby rates recovered revenues based upon number of kilowatt-hours used as opposed to peak demand. Low-load factor customers, those whose average demand is a low percentage of their peak demand, would more likely to be hurt by a standby tariff since their relatively low volumes combined with demand spikes makes them losers under a tariff design that recovers costs based upon demand rather than energy use. Low-load factor customers who peak during off-peak periods, however, may benefit since their peak will not be captured in the daily as used demand charge.

Figure 1 illustrates a typical high-load factor customer's use of energy. Customers will relatively little weather sensitive load, such as industrial customer using energy for manufacturing, might have this type of energy usage.

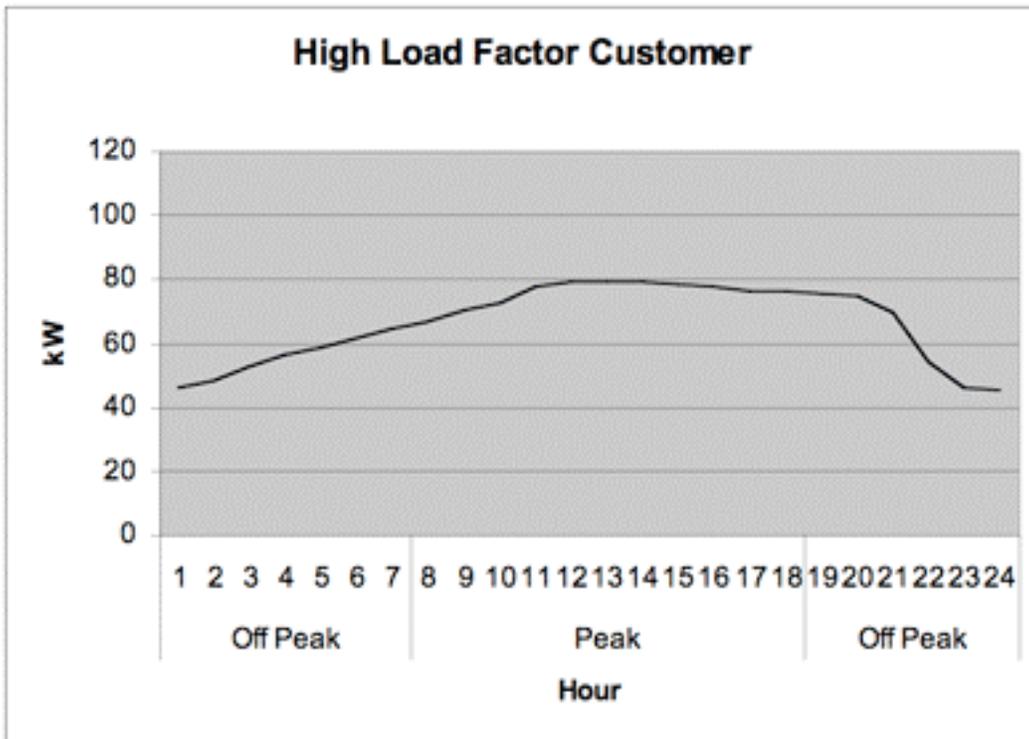
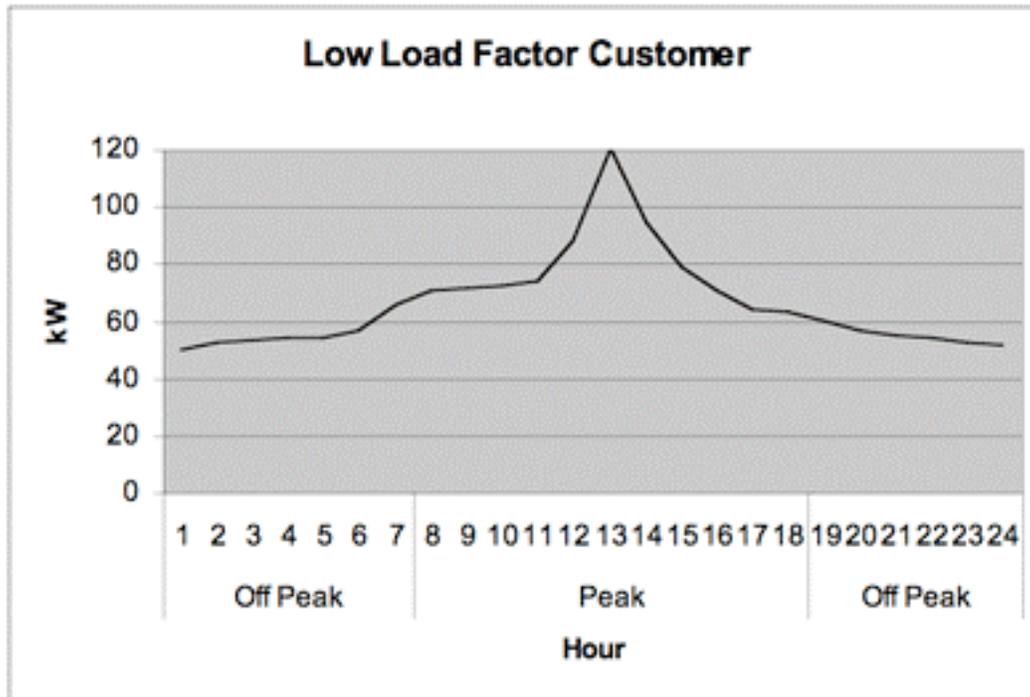
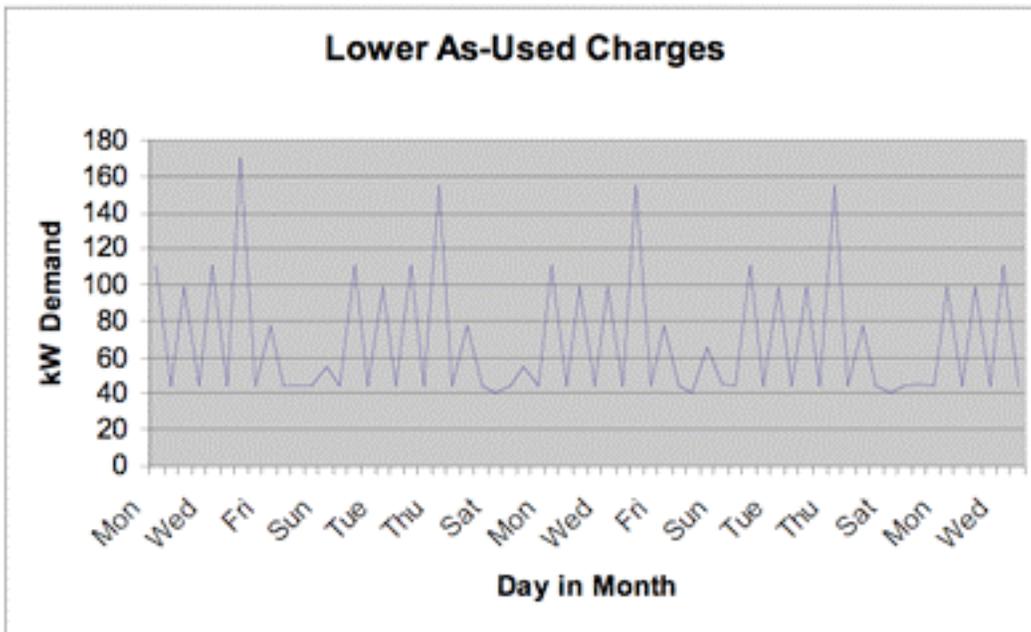
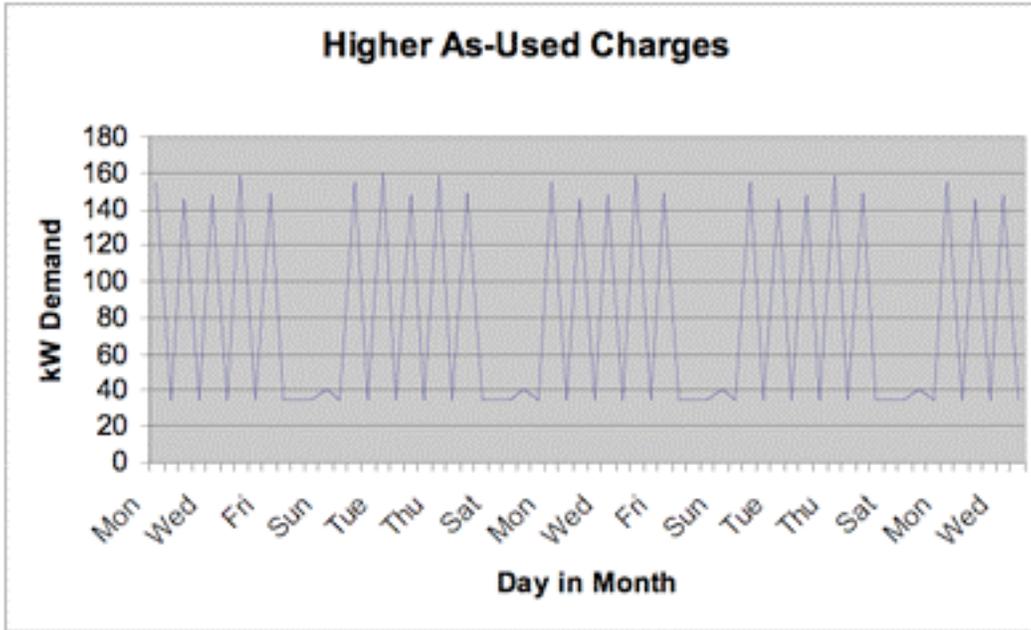


Figure 2, by contrast, shows a low-load factor customer with peak demand that is considerably higher than its average demand. Note that in the two examples, both customers use the same total kWh through the day; the difference is the timing and degree of their peak demands. Low-load factor customers could be commercial customers with highly weather-sensitive load or multi-family buildings, although the latter might have peaks somewhat later during the on-peak period. Low-load factor customers with peak demand during off-peak hours, for example a steel mill that starts its manufacturing processes before on-peak hours begin, would have a similar looking curve, but the peak would be far to the left.



In addition to load factor, a similar but distinct characteristic that influences a customer's standby delivery charges is how often the customer achieves a high kW demand "spike" at least once in a day. Since the daily as-used demand charge is set daily, a high fifteen minute demand will impose the same delivery charge as if that same level of demand were maintained for several hours. The Estimator uses a ratio, called the "Average Demand Discount Factor" to estimate this consumption characteristic.

One important difference between load factor and this demand characteristic is that as-used demand charges are established only on peak. Furthermore, since the as-used demand charges are set daily, they are not affected disproportionately by a monthly peak; at most the peak day contributes one daily peak demand of the twenty or so peak days in a month. Figures 3 and 4 illustrate how the as-used demand components of a customer's bill are related to the average of peak daily demands, not the monthly peak. Also note that the high as-used charge customer imposes lower weekend demand, but because weekends are not peak days, those days do not contribute to the standby as-used demand charges.



In those cases where the standby tariff results in an increase in utility bills compared to the bills that would have been received under the otherwise applicable service classification, the financial benefits of investing in CHP will obviously be decreased. To the extent a customer's payback period is significantly lengthened because of the impact of the standby tariff, the customers may have to choose between forgoing the opportunity to build a CHP system or building redundant capacity. Since building redundant capacity will increase the cost of energy per kWh, the reliability benefits would then have to be weighed very carefully against the costs of such a system.

There are significant reliability benefits to redundant capacity in addition to avoiding standby tariffs, since customers will be indifferent to distribution utility power quality problems and outages; however, the costs of the increased reliability will be too high for many customers.

Customers should consider various alternatives to reduce their contract demand and daily as-used demand charges such as, if feasible, shifting load from on-peak to off-peak periods as well as technology sizing options. Users of the Standby Estimator should consider running various sensitivities with different loads and different size CHP systems.

The Estimator is designed to move the question of how significant the standby tariff will be from a theoretical discussion to an approximation of what the actual impact will be on specific users. In fact, that's the only impact that most readers of this Manual will care about.

Summary Description of Tariff

Customers supplying some, or all, of their own electric load in parallel with their local utility's electric system are subject to their utility's standby tariff. This section of the Manual describes Con Edison's standby tariffs; most of the other distribution utilities in the State have similar tariffs. It is essential that customers considering the installation of CHP examine (or have their consultants examine) the tariffs of the specific company serving the location of their potential facility. Citations to specific sections of the Con Ed tariffs are included in the body of this report. Links to the tariffs of other companies can be found in Links at the end of this Manual.

Customers in Con Edison's territory are subject to tariff SC-14A (the "Standby Tariff"). The Standby Tariff can be found at <http://www.coned.com/documents/ra/ra-sc14.pdf>. Key elements of the Standby Tariff are:

Applicability

Would the standby rates apply to the CHP system I'm thinking about building?

The Standby Tariff is generally applicable to service used to "replace and or supplement the power and energy ordinarily generated by a Customer by means of a private generating facility on the premises..."(8) The main exceptions are for very small systems, renewable systems, and high efficiency CHP less than 1 MW, discussed in a response to a question below.

How do I know which standby rates would apply to me?

The precise rates the consumer is charged are determined by the customer's "service classification". A customer's service classification will be the same whether or not the customer has an onsite generation facility and will be based on both the nature of the customer site (e.g., residential, commercial, industrial) and the level of the customer's demand. a.(9)

Am I eligible for an exemption so that I wouldn't have to pay the standby rate?

The Standby Tariff includes exemptions allowing certain customers to be billed under the otherwise applicable rate rather than the Standby Tariff.

1. Customers whose on-site generation has a total nameplate rating equal to no more than 15 percent of the maximum potential demand served from all sources.
2. Customers who would receive service under Service Classifications No. 1-RA, 2-RA, 7-RA or the energy-only rate of Service Classification No. 12-RA if they did not have on-site power, the common element being that the rates do not bill for demand.
3. Customers with a contract demand of less than 50 kW, provided, however, that customers who are not eligible for service under the above two exemptions may opt-in to the Standby Tariff by providing advance notice to Con Ed.(10)

Are there certain technologies that are exempted from the standby rate?

To encourage clean and renewable energy technologies, the Commission provided an optional exemption from the standby rates for certain on-site generation using an "eligible designated technology" including:

- fuels cells
- wind
- solar thermal
- photovoltaics
- sustainably-managed biomass
- tidal
- geothermal
- methane waste and
- CHP systems of less than 1 MW that meet certain size, efficiency and environmental criteria including an annual overall fuel efficiency of at least 60 percent.

To be eligible for the designated technology exemption, the customer must have a Contract Demand (explained in next section) of 50 kW or greater and on-site generation having a total nameplate capacity equal to or more than 15 percent of the maximum potential demand from all sources.

In order to be eligible for the designated technology exemption, the on-site generation must enter service by May 31, 2009.

If I am going to be subject to the Standby Tariff, does it take effect immediately or can it be phased in?

The Standby Tariff will be phased in except for those customers who affirmatively elect to be billed at the full Standby Tariff rate. Customers who opt to phase-in application of the Standby Tariff could have had their bills calculated at the otherwise applicable rate until 2008; for the next year at the otherwise applicable rate plus 25% of any difference between bills calculated at Standby Tariff rates and the otherwise applicable rate; increasing another 25% each of the next three years (11).

I am eligible for an exemption to the standby rate. How do I know whether it is advantageous to opt out of this rate?

The Estimator will provide an estimate of whether a customer is better off on the standby rate or the otherwise applicable rate. Before actually opting out of the exemption, a customer should work with its own consultant or in-house expert to confirm that its bills will be lower under the standby rate than the otherwise applicable rate.

Contract Demand

What is the contract demand and why does it matter?

Contract Demand, for purposes of the Standby Tariff, is a customer's maximum potential demand, expressed in kW.(12) The Contract Demand is important because it helps to determine whether the Standby Tariff is applicable; if it is applicable, the Contract Demand becomes a critically important factor determining how high a customer's bill will be.

Who determines the contract demand?

A customer may establish its Customer Demand, but if it fails to do so in its application for service the utility will establish the Contract Demand for the customer (13). Whoever establishes the Contract Demand, if it is exceeded at any time by the maximum monthly demand, that maximum monthly demand becomes the new Contract Demand (14).

A customer who chooses its own Contract Demand is permitted to revise the Contract Demand downward once every 12 months; however, the new Contract Demand cannot be set at a level that is lower than the maximum demand during the previous 12 months unless the Customer provides an engineering analysis demonstrating equipment changes supporting the lower demand (15).

What happens if I set my contract demand too low?

There may be a temptation to set a low contract demand on the grounds that this will minimize overall standby charges. However, setting too low a demand can result in significant surcharges. Exceeding a customer selected Contract Demand by more than 10 percent but less than 20 percent will result in a surcharge equal to 12 times the sum of the monthly demand charges for the demand in excess of the Contract Demand. If the monthly maximum demand exceeds the Contract Demand by 20 percent or more, the surcharge will be equal to 24 times the sum of the monthly Contract Demand charges for the excess demand with provision for waiver (16). Of course, setting too high a Contract Demand would be counterproductive, since it would increase demand charges unnecessarily and could undermine the economics of a project.

What if the utility sets my contract demand?

Where the utility sets the contract demand (17) , there are no penalties if the Contract Demand is exceeded (18). The customer has the opportunity establish its own Contract Demand if it doesn't like that established by the utility, but doing so makes the customer subject to the surcharges described above (19). Since customers can be penalized for setting too low a Contract Demand charge by having to pay the surcharge described above, and are effectively penalized for setting too high a Demand Charge by paying unnecessarily high rates, there is an obvious advantage to letting the utility set the contract demand, assuming the utility itself does not set the Contract Demand too high. It is therefore recommended that users work closely with their system design consultant so that whoever sets the Contract Demand, sets it at the appropriate level.

What are Daily As-Used Demand Charges?

In addition to the Contract Demand charge, customers are also required to pay a daily as-used demand charge. The daily as-used demand charge, as its name suggests, is a per kW charge calculated on a daily basis and based upon peak demand during the peak weekday hours, as described below. Customers can reduce their daily as-used demand charges by shifting load off-peak.

Tariff Mechanics

What are the key elements of the Standby Tariff?

Rates under the Standby Tariff vary depending upon the otherwise applicable service classification, but all include the same basic elements:

- **Monthly Customer Charge** - a fixed amount that does not vary based upon usage;
- **Delivery Service Contract Demand Charge** - per kW of Contract Demand (as described above);
- **As-used Daily Delivery Service Demand Charge (Period 1)** - per kW of daily peak demand during Monday - Friday hours between 8 am and 6 pm;
- **As-used Daily Delivery Service Demand Charge (Period 2)** - per kW of daily peak demand during Monday - Friday hours between 8 am and 10 pm. (20)

Do the Standby Tariff charges vary by season?

The Standby Tariff has higher rates during the billing period June-September than the other months of the year, to reflect higher costs incurred during the summer when peak demand imposes higher costs on the electric system. During the non-summer months the Period 1 charge disappears for all customers, since the rate is designed to reflect the higher costs incurred during the system peaks that almost always occur on summer weekdays. In addition, during the non-summer months Period 2 rates decrease for most customers (21).

Are there any other charges collected by the Standby Tariff?

Rates under the Standby Tariff also include recovery of various other charges and adjustments including:

- the Monthly Adjustment Clause ("MAC") - The MAC is authorized by the PSC as a mechanism for Con Edison to recover a variety of supply related and other charges related to its operations. All Con Edison delivery customers pay the MAC, whether or not they are full service customers or buy commodity energy through an ESCO. The MAC is imposed as a fixed addition to the customer charge and a per kW addition to the contract demand charge and as-used daily demand charges.
- System Benefit Charge - a small surcharge to support public benefits programs such as energy efficiency investment and research and development.
- Renewable Portfolio Standard Charge - to support statewide procurement targets for energy generated from renewable energy sources and other charges and other charges and adjustments included in each customer's otherwise applicable rates (22).

Key Design and Operational Issues

Will the Standby Tariff affect how I operate a CHP unit?

The Standby Tariff provides important incentives for customers to minimize their Contract Demand both to avoid paying higher demand charges and to avoid paying surcharges if they exceed their self-selected Contract Demand levels. For example, customers will have a powerful incentive to avoid using Con Ed supplied electricity during shoulder periods (weekday evenings) if buying energy from Con Ed would result in a new maximum monthly demand, even if Con Ed energy is otherwise cheaper to purchase than the cost of self-generating.

Similarly, the Standby Tariff provides an incentive for customers to shift load off-peak in order to reduce their daily as-used demand charges even if the daily peaks do not threaten to exceed the Contract Demand level.

In addition, customers will have to make every effort to avoid system maintenance during the summer billing months in order to avoid a new maximum monthly demand.

As set forth above, the exception for designated technologies is scheduled to expire on May 31, 2009, so there is a powerful incentive to commence operation of on-site generation before that date for those customers with relatively low-load factors. While the designated technology exception is available for a variety of clean and renewable technologies listed above in the Applicability Section, customers operating CHP systems that want to take advantage of the exception have a special set of design and operational issues. Since CHP units must obtain an annual overall fuel efficiency of 60 percent in order to avoid the standby charge, customers owning such systems have to avoid generating electricity without also using the thermal energy that is generated at the same time. While it might be tempting to run the CHP system at times when it would be cost-effective to generate electricity but there is no thermal load, doing so will reduce overall fuel efficiency and could jeopardize eligibility for the designated technology exception. Complicating matters, in some cases it might be beneficial to run the CHP system without thermal load, since with a high enough load factor the standby tariff would not result in higher overall rates and, therefore, there would be no reason to plan operations so as to obtain the fuel efficiency level necessary for the exception. Customers must carefully consider, with the help of consultants if they do not have in-house expertise, whether it makes sense to try to obtain the designated technology exception.

There are, unfortunately, some operational issues that could unavoidably lead to higher demand charges. If a utility outage, even a momentary system trip, leads to a spike in a customer's demand, the customer has to pay the resulting charges (and possibly surcharges) even though the underlying problem originated with the utility.

Proper analysis of the design and key operational issue impacts on energy use and demand will be essential in order to provide reasonable inputs for use in the Estimator.

The Estimator

Purpose

The Estimator is a new web-accessible and interactive tool that makes it possible for users to estimate the utility charges that would be incurred if a CHP system or other on-site generation system were built compared to the charges that would otherwise be incurred absent such a system. The Estimator fully incorporates the costs that result from the applicability of the Standby Tariff rather than the rate that would otherwise apply absent the on-site generation system. The Estimator provides the type of transparent, easily accessible and understandable information about the impact of possible standby charges that is necessary for developers/utility customers considering the possibility of building on-site generation. Unless the new on-site generation will provide all of a customer's electrical needs and include sufficient redundancy to permit the customer to isolate itself from the electrical grid, the customer will need to rely upon its local electric distribution utility for backup electricity. If it does so, it will have to pay standby rates and should consider the impact of the Standby Tariff on the economics of the on-site generation it is considering.

The Estimator will only generate an approximation of the user's expected energy and demand costs, with and without a contemplated CHP unit, based upon user provided site-specific load data (e.g. service territory, service class, monthly kWh and highest kW), system data (e.g. technology and nameplate capacity) and energy cost data (e.g., cost of fuel inputs for CHP unit and costs of energy if purchased from electric distribution utility or other supplier). Since the Estimator will only provide estimated costs, it is not intended to provide the level of precision necessary to make a fully informed decision regarding the economic viability of a new CHP or other on-site generation system. Rather, the Estimator is only intended to provide information that will help a user make a preliminary build/no build decision, decide whether to seek an exemption from application of the Standby Tariff and to determine whether it makes sense to further investigate the economics of building a CHP system.

A potential CHP installation may provide cost savings despite an increase in utility tariff charges. Furthermore, some CHP installations offer many benefits such as improved power quality and reliability, and thus may be justified even if the impact of standby rates is relatively high. If it does make sense to proceed further, the user should consult a professional to fully investigate the cost effectiveness of a new CHP system.

The Estimator does not address the issue of interconnection charges. Interconnection charges are described in the Standby Tariff (23), but are site-specific costs that are beyond the scope of the Estimator and the Manual. Interconnection charges are an important capital cost that must be included in the economic analysis of a potential new CHP system.

How to Use the Standby Rate Estimator (SRE)

This section describes the materials the user must have available to utilize the SRE. It then describes critical uncertainties that will impact use of the SRE. Finally, the section includes a walk-through of the SRE illustrating how it works given a set of assumed facts.

What data is necessary to use the Estimator?

The customer will need to have available at least:

- one and preferably three years of electric bills;
- nameplate capacity and technology of the CHP unit that is being considered and its projected in-service date;
- knowledge of the CHP system's technical efficiency (for purposes of considering whether the Designated Technology exemption is available).

Where do I find my delivery costs?

The delivery costs are the costs of moving energy from the utility's transmission system through its distribution system to the customer's electrical load as recovered through the Standby Tariff or the otherwise applicable rate. Since the SRE estimates the difference between bills calculated using the Standby Tariff and the otherwise applicable rate and since the SRE is based upon the otherwise applicable rate, it is essential that a SRE user know the otherwise applicable rate. That rate can be obtained by referring to a past bill or by calling Con Edison at 1-800-343-4646.

Do I have to provide information about my energy costs?

As to energy costs, the customer is free to purchase energy from any of the Energy Service Companies (frequently referred to as "ESCOs") serving the State or from its local electric distribution utility. The Standby Tariff notes that standby customers may purchase electricity from Con Edison at the company's Market Supply Charge (frequently referred to as the "MSC") and Adjustment Factor, with such charges assessed on both a per kWh and a per KW basis (24). The Standby Tariff also notes that in most cases a customer will be assumed to be purchasing its energy supply from Con Edison, unless an ESCO enrolls the customer in the retail access program or Con Edison receives notice from the customer that it has a non-Con Edison source of supply (25).

The Estimator will use default estimates for commodity prices based upon Con Edison's MSC and Adjustment factor. If the user plans to purchase energy from an ESCO and knows that the ESCOs rate design differs from that of the distribution utility, ESCO specific data would be helpful. The more precise the fuel price data, the more accurate the projection of CHP generation and generation costs and, also, the more accurate the demand derived by the Estimator for use in the calculation of the Standby Tariff. It is, of course, impossible to precisely estimate next year's fuel prices (much less next month's), so the Estimator's results are inherently inexact.

Why do I need three years of old bills?

Past consumption is critical information, so the user should have the last three years worth of bills available. While one year will be sufficient in most cases, additional years are helpful to ensure that usage during the previous year is likely to recur. The user should consider the possibility of any significant changes in consumption patterns that result in changed overall consumption or consumption patterns such as moving usage from a higher-priced billing period to a lesser-priced period or vice versa. For example, if demand for a user's product is expected to vary significantly from the past, with a resulting change in demand, information about anticipated consumption should be provided. Unusually hot or mild summers may also cause significant annual differences for customers with high air conditioning load.

Glossary of Terms

Annual overall fuel efficiency - A measure of total energy efficiency calculated by dividing combined useful thermal and electric output by the potential energy of the fuel burned, used for determining qualification as an "eligible designated technology."

As-used demand charges - A per kW charge calculated on a daily basis and based upon peak demand during the peak weekday hours.

Backup service - Distribution utility provided service in case a customer's on-site generation is not operational for some reason.

Combined heat and power - Generally, the use of a single fuel source to provide both steam or other thermal energy for industrial or commercial production or process and to generate electricity.

Contract demand - For purposes of the Standby Tariff, a customer's maximum potential demand expressed in kW.

DMS - Con Edison's Demand Monitoring Software, described at <http://www.coned.com/sales/business/demandmonitoringsoftware.asp>.

Eligible designated technology - Clean and renewable on-site generation energy technologies, eligible for an optional exemption from the standby rates including: fuel cells; wind; solar thermal; photovoltaics; sustainably-managed biomass; tidal; geothermal; methane waste; and CHP systems of less than 1 MW that meet certain size, efficiency and environmental criteria including an annual overall fuel efficiency of at least 60 percent.

Energy Service Companies (ESCOs) - For purposes of this Manual, companies providing energy to end-users in competition with local distribution companies.

High-tension service - Service provided at a primary nominal voltage of; 4 kV, 13 kV, 27 kV or 33 kV. The Customer provides primary switchgear and power transformers to isolate the Customer's service from the Company system.

High-load factor customers - Customers whose demand is relatively flat and whose average demand is a high percentage of their peak demand.

Interconnection charges - Site-specific charges that on-site generators must pay to be electrically interconnected with the distribution system.

Low tension service - Service at 600V or below.

Low-load factor customers - Customers whose average demand is a low percentage of their peak demand.

Maintenance service - Distribution utility provided service in case the customer must return to utility service during routine testing and upkeep of the CHP system.

Market Supply Charge (MSC) - The MAC is as a monthly pass-through of energy costs purchased through the wholesale energy market, authorized by the New York State Public Service Commission (PSC) and assessed only on those who purchase energy from Con Edison.

Monthly Adjustment Clause ("MAC") - The MAC is authorized by the PSC as a mechanism for Con Edison to recover a variety of supply related and other charges related to its operations. All Con Edison delivery customers pay the MAC, whether or not they are full service customers or buy commodity energy through an ESCO.

Monthly Customer Charge - According to the PSC's glossary, "The charge to a customer which is designed to compensate the utility for the costs it incurs as a result of that customer's subscription to utility service, irrespective of the customer's eventual demand or energy use. For example, metering costs, including the cost of this meter and the cost of mutual reading, are components which contribute to the customer charge."

Nameplate rating - The full-load continuous rating of a generator under specified conditions as designated by the manufacturer. The net output of some generators will be less than the full-load continuous rating because of the "parasitic" load necessary to operate the generator.

Otherwise applicable rate - The rate that would be applicable if a customer were not subject to the standby tariff.

Parasitic Load - Electricity necessary to operate a generator, e.g. gas compressors for microturbine.

Power quality - Temporal variations in the characteristics of the power that an individual customer sees at its service panel.

Renewable Portfolio Standard Charge - A small surcharge authorized by the PSC to support statewide procurement targets for energy generated from renewable energy sources.

Supplemental power - Distribution utility provided service that provides the difference between a customer's total load and its installed on-site generation.

Systems Benefit Charge - A small surcharge authorized by the PSC to support public benefits programs such as energy efficiency investment and research and development.

Links

Utility Standby Tariffs for All NY Electric Distribution Company Standby Tariffs

Consolidated Edison

Main Rates- <http://www.coned.com/rates/>
Standard Tariff- <http://www.coned.com/documents/elec-sched1.htm>
Standby- <http://www.coned.com/documents/ra/ra-sc14.pdf>
Tariff Name, Notes- SC 14-RA
Steam Tariff- [coned.com/rates/default.asp#i_steam](http://www.coned.com/rates/default.asp#i_steam)

Natl. Grid / Niagara Mohawk

Main Rates- <http://www.nationalgridus.com/niagaramohawk/business/rates/rates.asp>
Standard Tariff- http://www.nationalgridus.com/niagaramohawk/non_html/rates_psc207.pdf
Standby- http://www.nationalgridus.com/niagaramohawk/non_html/rates_psc207.pdf
(see PDFp. 672 of 788) Tariff Name, Notes- SC-7

RG&E

Main Rates- <http://www.rge.com/rgeweb/webcontent.nsf/doc/PriceTariffs>
Standard Tariff- <http://www.rge.com/rgeweb/webcontent.nsf/doc/PriceTariffsGasElec19>
Standby- [http://www.rge.com/rgeweb/webcontent.nsf/Lookup/PSC19=237_250/\\$file/PSC19=237_250.pdf](http://www.rge.com/rgeweb/webcontent.nsf/Lookup/PSC19=237_250/$file/PSC19=237_250.pdf)
Tariff Name, Notes- SC No. 14

Central Hudson

Main Rates- www2.dps.state.ny.us/ETS/search/search.cfm
Standard Tariff- www2.dps.state.ny.us/ETS/search/search.cfm (Search on ETS)
Standby- www2.dps.state.ny.us/ETS/display_files/4276054.pdf PDF p. 33 of 112; Leaf 272
Tariff Name, Notes- SC 14 (use PSC's ETS system)

Orange and Rockland

Main Rates- <http://www.oru.com/aboutoru/tariffsandregulatorydocuments/>
Standard Tariff- Pick service class from list on
<http://www.oru.com/aboutoru/tariffsandregulatorydocuments/newyork/scheduleforelectricservice.html>
Standby- <http://www.oru.com/documents/tariffsandregulatorydocuments/ny/electrictariff/electricSC25.pdf>
Tariff Name, Notes- SC 25

NYSEG

Main Rates- <http://www.nyseg.com/nysegweb/webcontent.nsf/doc/PriceTariffs>
Standard Tariff- [http://www.nyseg.com/nysegweb/webcontent.nsf/Lookup/120v41/\\$file/120v41.pdf](http://www.nyseg.com/nysegweb/webcontent.nsf/Lookup/120v41/$file/120v41.pdf)
Standby- [http://www.nyseg.com/nysegweb/webcontent.nsf/Lookup/120v41/\\$file/120v41.pdf](http://www.nyseg.com/nysegweb/webcontent.nsf/Lookup/120v41/$file/120v41.pdf)
(see PDF p. 310 of 448)
Tariff Name, Notes- SC NO. 11

PSC tariff site:

www2.dps.state.ny.us/ETS/home/index.cfm

Contact Information for NY Electric Distribution Companies

Utility Contact Info: <http://www.dps.state.ny.us/electricu.html>

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Rochester NY 14649-0001
(716) 546-2700

Central Hudson

284 South Avenue
Poughkeepsie, NY 12601-4879
(914) 452-2000

Orange and Rockland

One Blue Hill Plaza
Pearl River NY 10965-3104
(845) 352-6000

NYSEG

P.O. Box 3287
Ithaca, NY 14852-3287
(607) 762-7200

Footnotes

1. Insufficient capacity could more accurately be considered supplemental load, but is treated the same as backup generation since it is treated the same way for billing purposes. To maximize total efficiency, it is usually recommended that CHP be sized to serve thermal needs first, with electric output envisaged as a free additional output.
2. Future references to CHP generally also apply to DG and other on-site generation.
3. Order[s] Establishing Standby Rates, in Case 02-E-1108, Central Hudson Gas & Electric Corporation (issued December 4, 2003); Case 02-E-0551, Rochester Gas & Electric Corporation (issued July 29, 2003); Cases 02-E-0780 and 02-E-0781, Orange & Rockland Utilities, Inc. and Consolidated Edison Company of New York, Inc. (issued July 29, 2003); and Case 02-E-0779, New York State Electric & Gas Corporation (issued July 30, 2003). National Grid's standby rates were set as part of the utility's general rate proceeding in Case 01-E-0075, Niagara Mohawk Power Corporation - Merger and Rate Plan, Opinion No. 01-6 (issued December 3, 2001).
4. National Grid's standby tariff provides an exemption for Environmentally 5. CHP Market Potential for New York State, prepared by Energy Nexus and the Pace Energy Project for NYSEERDA, October 2002.
6. Cases 02-E-0780 and 02-E-0781, Order Establishing Electric Standby Rates (issued July 29, 2003).
7. Id.
8. Standby Tariff P.S.C. No. 2 - Retail Access, Fourth Revised Leaf No. 135. The Standby Tariff is also applicable to station use by a wholesale generator, a use not described in this manual, but is not applicable where service is provided under Rider R of the Full Service Schedule. The Standby Tariff is generally applicable to SC 12 customers (Multiple Dwelling Space Heating) with demand meters, but is not applicable to a limited number of "energy-only" customers on that tariff. The SC 12 "energy-only" customers, therefore, should not use the Estimator. The Estimator incorporates for SC-12 the rates applicable "Where the Customer is Billed for both Energy and Demand," not the (relatively rare) case "Where the Customer is Billed for Energy Only."