

How to Identify Electricity Theft in Apartments without Hardware or Software Investments

Study shows that apartment tenants are responsible for 20% of electricity theft, resulting in lost revenue for utility companies



ABSTRACT

Electricity theft costs utility companies over a billion dollars in lost annual revenue.

Utility companies estimate that electricity theft costs them over a billion dollars in annual revenues in the United States. A significant amount of electricity theft is due to meter tampering by apartment tenants.

This paper will describe how meter tampering in apartments can be identified easily and cost effectively without additional investments in hardware or software. Violators can be detected remotely within a few days and be given an opportunity to correct the situation or face prosecution.

THEFT IS ILLEGAL & DANGEROUS

Meter tampering is a prosecutable crime and a serious safety hazard.

Electricity theft, an ongoing problem for all electricity providers, is punishable by jail time, a fine or both in the United States. Most cases of electricity theft occur when violators physically alter the internal mechanism of their electric meters, causing the electricity to bypass the meter and not be recorded. As a result, violators are not charged for the total number of kilowatt-hours actually used, causing lost revenue for the electricity providers. In addition, tampering with live electricity inside a meter is dangerous and could result in a fire, shock or even death to the perpetrator. Utility staff could also be injured when later repairing the meter.

THEFT IDENTIFICATION METHODS

These are some of the more common methods of identifying electricity theft:

Meter readers used to be the first line of defense against meter tampering. But not anymore.

- **Financial Rewards** - Utility companies encourage consumers to report electricity theft, sometimes offering big rewards for information leading to conviction of anyone stealing electricity. Unfortunately, most cases are never identified in the apartment industry due to lack of timely information.
- **Periodic Checks** - Electricity theft frequently takes place after service has been disconnected. Some utility companies periodically check disconnected meters if the customer has not contacted them to reconnect service. This labor-intensive, manual process has little chance of success given that the apartment industry averages 70% turnover of tenants annually.
- **Meter Readers** - Utility meter readers typically suspect that electricity theft is taking place when they find a broken meter tag or other signs of tampering. But as more utility companies outsource the meter reading function to third parties, training meter readers to detect theft is becoming more difficult and less efficient. In addition, third party meter readers do not read disconnected meters.

IMPACT OF ELECTRICITY THEFT

Electrical providers are losing more than \$186 million a year due to meter tampering after a CSA disconnect in the apartment industry.

BluTrend recently conducted a study comparing utility meter data with tenant data for four apartment owners with a total of 30,367 apartment units in de-regulated Texas markets. For 2007, we found 230 instances of meter disconnects that occurred after a CSA violation. A CSA violation takes place when a new tenant moves into an apartment with a Continuous Service Agreement (CSA) and fails to enroll for electricity service under his name, as the lease requires.

CSA violations ultimately cost apartment owners millions of dollars in additional electricity expenses that are actually the responsibility of their tenants. To minimize this cost, apartment owners are forced to disconnect electricity to units with a CSA violation. However, they usually are unaware of what often happens next—meter tampering to get free electricity.

Based on the results of our study, we estimate that electricity providers are losing in excess of \$186 million a year due to meter tampering after a CSA disconnect in the United States.

Note: Electricity theft due to non-payment is not included in this study. Furthermore, we are not including additional operating and administrative expenses associated with electricity theft paid for by the utility companies.

COST ANALYSIS

Meter tampering after CSA disconnects costs Texas utility providers an estimated \$10.6 million per year.

In our study, we found that 112 tenants in 47 properties are still living in apartment units (as of January, 2008) where the electricity service was disconnected an average of 97.5 days for a total of 10,923 days. Some units have been occupied for more than 335 days after disconnection! There were also 118 tenants who moved out after occupying their units an average of 65.8 days following electrical disconnect—a total of 7,766 days. Overall, tenants used 30 to 284 occupancy days from disconnect to move out.

How can these 230 tenants live in their apartments for months without electricity? The only feasible answer is that they are tampering with the disconnected meter to get free service, undetected.

We estimate that lost revenue from the 112 tenants that are still living in their apartments will be about \$161,000 per year, at a daily cost of \$3.97 per unit (average 850 kWh per month consumption at 0.14 cents per kWh total charge). Applying these findings to the 2 million apartments in Texas, the electricity theft due to meter tampering after a CSA disconnect is estimated at \$10.6 million per year in lost revenues. Applied to the 35 million apartments in the United States, the estimated loss is \$186 million.

CSASecure® SOFTWARE SOLUTION

*The CSASecure®
proprietary
engine quickly
identifies tenants
still occupying
their units after
their electricity
has been
disconnected.*

We developed CSASecure® to prevent electrical theft in the apartment industry. This patent-pending, web-enabled software solution compares tenant data from apartment owners with meter information from utility companies. The CSASecure® proprietary engine identifies tenants that are still occupying their units more than a few days after their electricity service has been disconnected. The utility company can use this timely, critical information to investigate the meters for those units and take necessary action if there is evidence of tampering.

When a potential tampering situation is detected, CSASecure automatically alerts utility employees. Using pushed alerts and e-mails, CSASecure also automatically notifies violators of the actions to be taken, based on a set of rules predetermined by the electricity provider.

CSASecure® BENEFITS & FEATURES

In addition to preventing lost revenue, using CSASecure software to identify electricity theft offers benefits such as:

CSASecure® is a hosted solution. It prevents lost revenue from utility theft without requiring the purchase of hardware or software.

- A fast, automated way to obtain critical occupancy information after a meter disconnect
- No hardware, software or additional capital expenses required
- Lower operating and administrative expenses
- A safer environment for meter readers and other field employees

Some of the features of CSASecure software include:

- Automated alerts to utility employees identifying potential tampering and theft
- Automated alerts and notifications to violators
- Reporting and analysis to assist with the prosecution process

UTILITY COMPANIES AND APARTMENT OWNERS WORKING TOGETHER

CSASecure®
closes the
information gap
that allows
electricity theft
to flourish.

CSASecure is an innovative solution that has already helped apartment owners identify CSA electrical theft and save as much as \$20,000 per community annually. Under a Continuous Service Agreement (CSA), utility meters at apartments are never physically turned on or off so that there is continuous service during turnovers. With estimated tenant turnover of 70% annually, there is plenty of opportunity for theft!

With proven savings like this, apartment owners have a strong incentive to provide non-sensitive residential data to identify and eliminate CSA theft using CSASecure. As our study shows, utility companies also have savings incentives for providing meter transaction data that can be used to identify theft from meter tampering.

Together, apartment owners and utility providers can close the information gap that allows electricity theft to flourish.

CONCLUSION

Energy theft is costing electricity companies over a billion dollars annually in the United States. We estimate close to \$186 million of that is due to CSA disconnects in the apartment industry. Electricity theft is growing, but current methods to identify it are not working effectively.

The CSASecure automated software solution can provide utility companies with critical information to investigate and prosecute violators quickly and easily, without any large deployment investment.

CSASecure® provides critical information for investigating and prosecuting violators quickly and easily. It's risk-free and it works!

- No hardware or software to buy
- No additional staff needed
- Safer identification method, with fewer risks for field staff
- Helps reduce operating and administrative costs

Identifying and eliminating theft benefits apartment owners, utility companies, consumers and conservation efforts. Aside from the commodity and financial savings, there is reduced risk of potentially costly safety problems and greater support for compliance with state laws.

CSASecure is easy to start and quick to implement. It is risk free and it works!

CSA Theft Study Findings

	Number of Apartment Units	Status	Number of Violations	Average Disconnect Days	Max Disconnect Days	Total Disconnect Days	Monthly Estimated Theft(K)	Annual Estimated Theft(K)
	30,367	Active	112	97.5	335	10,923	\$13	\$161
	30,367	Inactive	118	65.8	284	7,766		
Texas	2,000,000		7,376				\$885	\$10,622
U.S.	35,000,000		129,087				\$15,490	\$185,885

Extrapolating from this study of 30,367 apartments in Texas, we estimate the cost of electricity theft after a CSA disconnect to be \$10.6 million in Texas and \$186 million across the U.S.

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