



# CASE STUDY

*HVAC Rooftop Unit Malfunction – Total Annual Cost Avoidance of \$21,550*

## OVERVIEW

In a retail store setting, natural gas is mostly consumed to heat the area during the colder months of the year. This means that as the weather turns nicer, the rooftop units switch from heating to cooling in order to maintain a comfortable temperature level in the store. This should therefore translate into a reduction in natural gas consumption. However, these units have many electronic and mechanical parts that can fail and often, multiple units will be used to provide adequate coverage. All this makes it hard to quickly detect issues and as we will discuss, some issues can remain hidden for long periods of time which in turn can be costly!

## ISSUE

One of our clients, a national retailer, has been using our Utility Data Management service for several years, which allows us to monitor their monthly consumption not only based on “logical” assumptions but also on their actual previous years’ data. This is how one of their sites was flagged for abnormal natural gas consumption. In the month of July, the store’s consumption rose to over 2700 cubic meters which was the equivalent of their regular consumption for the month of April. As no heat is required in July, their consumption should be significantly lower than April.

## ACTION TAKEN

- 1) An investigation was launched into this over usage.
- 2) The July 2016 consumption was compared to the July 2015 consumption and a significant increase was noticed.
- 3) Our client was informed of this issue and they were able to schedule an inspection of their equipment.
- 4) After detecting this problem, they were able to fix it and avoid further waste.

## RESULTS OF INVESTIGATION

As the average gas consumption during the 2015 summer months for this particular location was only 50 cubic meters, the July 2016 consumption of 2700 cubic meters represented a monthly over usage of over 5800%. After being made aware of the over consumption, our client’s inspection on their equipment revealed that the problem was with one of their rooftop HVAC units. This unit was in heating mode instead of cooling mode. Since this location has multiple units, the other units were still in cooling mode and were able to keep the temperature at the desired level therefore hiding the problem. Our client was able to have the unit repaired to avoid further over usage. By detecting this issue, our client was able to avoid further waste which would have totaled an annual cost of \$21,550.

## CONCLUSION

For sites with multiple rooftop HVAC units, issues like the one studied in this case can happen at any time. Since not all units will fail at the same time, the malfunctioning unit can go unnoticed for a very long time as the other units compensate. This not only results in higher costs in natural gas but also in electricity as well. Furthermore, this would put more strain on the good units therefore reducing their lifespan and increasing their risk of failure. Without having a utility bill data management system in place, our client could have gone many more months without discovering this issue. **Could you possibly be heating space that needs cooling or vice-versa? Contact us and let Powerhouse help you regain peace of mind.**

## WANT TO FIND OUT MORE?

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