Setting the Proper Baseline for Existing Buildings in a Metered Energy Efficiency Transaction

In a transaction using the Metered Energy Efficiency Transaction Structure (MEETS™) the utility pays for metered energy benefit (savings) from efficiency improvements, based on the difference between a building’s current (post-retrofit) energy use and a baseline representing pre-retrofit energy use.¹

The transaction is based on the idea of actual measured performance: both the baseline and current use are based on measured actual performance in the particular building, providing a consistent, transparent, and defined approach to the definition of the baseline, the metering, and the mathematics.

To assure accuracy of measurement, MEETS™ requires the use of a dynamic baseline meter as a whole-building measurement tool. Such a meter must meet utility resource grade standards. (The DeltaMeter® is one such tool.) This requirement is based on the strong principle linking a building’s current performance (metered consumption) and its historic performance (the baseline, created using dynamic baseline meter principles).

Setting the MEETS Baseline

Establishing a baseline that is accurate and fair to utilities, ratepayers and customers is essential. A baseline that is set too high can cost ratepayers, and tenants, too much. A baseline that is set too low will result in developers designing less energy efficiency into buildings because they will not be rewarded for the energy benefits those designs create.

The proper MEETS baseline for a retrofitted commercial building is determined by using that specific building’s past performance to establish historic usage. The resulting baseline, adjusted for the weather, number of tenants and activities of the tenants, represents the amount of energy the building would have used if the additional efficiency investments had not been made.²

The difference between this baseline and the building’s actual (post retrofit) energy use represents the real benefit to the utility.³ The accurate measurement of energy saved compared to this baseline is the heart of the “metered savings” approach to efficiency in a Metered Energy Efficiency Transaction.

Background: The Utility’s “Obligation to Serve”

Utilities are required by law and regulation to serve the energy needs of the buildings that make up their service territories, regardless of the efficiency of the buildings. This requirement is referred to as the “obligation to serve.”

¹ The baseline is adjusted over time for routine and non-routine changes in the building. The methodology for those adjustments is part of the definition of a compliant dynamic baseline meter.
² EnergyRM’s Chief Technology Officer, Howard Reichmuth, has extensive experience in developing these types of baselines.
³ and its true Obligation to Serve.
**Relationship to a Metered Energy Efficiency Transaction**

The MEETS baseline is an operational use baseline. It is based on the principle of “obligation to serve.” Utilities need to serve energy demand whether or not the building demanding it is up to code, or even met code when built – this is in fact the energy they do supply.

Of course, the building pays for this energy also, both before the retrofit and under MEETS, so it is fair – no one receives “something for nothing” by using this baseline under MEETS.

**Relationship to Building Code and Incentives.**

While it is always proper to use the operational baseline for MEETS, where by design there is no free riding (because the building will always have agreed to go on paying the baseline), utility incentive programs may well be designed with different baselines, reflecting their different reality.

Many utilities do not provide incentives for improvements that would be required anyway by building code. Others adjust the incentives (which are designed to encourage early replacement of old equipment) to limit payment for improvement from “worse than code” only for the period of time that represents the accelerated action. These limits are an attempt to prevent “free riding” – the delivery of “something for nothing.”

Incentive design is a difficult problem. Many buildings remain inefficient for many years because building owners do not have a financial incentive to upgrade them to meet building code. The result of this inaction is that utilities must continue to provide energy to meet the unnecessarily high demand in such a building. Incentives calculated from operational baselines, without regard to code requirements or timing of upgrades might result in substantially more energy efficiency being undertaken, at the cost of more free ridership. This is a fundamental policy decision and strong feelings exist on both sides of the issue, but it is an issue about the design of the extra incentive value, – not about MEETS.

MEETS baselines should always be operational.

**For more information**

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4 This is particularly true when the energy savings are delivered to the tenants (the classic “split incentive” problem. However, it is also true for building owners who wish to recover their investments in energy efficiency during the limited time period when they own the building.