

DOCKETED

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EPA Standard Practice for Calendarizing Individual Utility Bills When Creating Aggregate, Whole-Building Data for Benchmarking in Portfolio Manager

Additional submitted attachment is included below.

July 11, 2016

California Energy Commission
1516 Ninth Street
Sacramento, CA 95814-5512

Re: Docket Number: 15-OIR-05

U.S Environmental Protection Agency (EPA) Technical Input on Building Energy Use Benchmarking and Public Disclosure Program Provisions of AB 802

EPA Standard Practice for Calendarizing Individual Utility Bills When Creating Aggregate, Whole-Building Data for Benchmarking in Portfolio Manager July, 2016

Background

Many utilities are striving to improve access to commercial building energy consumption data, as a way to support property owners who are seeking to benchmark. Streamlined data access is be most critical in multi-tenant properties (office, multifamily, retail), where individual tenants are separately metered and directly billed by the utility. In such cases, the property owner may not have access to all tenant-level energy data – and without accounting for all energy consumption at the property, the building cannot be accurately benchmarked. However, a utility cannot simply provide tenant-level consumption data to the building owner because of customer privacy policies and regulations.¹ As a result, several utilities are offering to provide building owners with aggregate whole-building data, upon request. By obtaining monthly, whole-building consumption data that does not reveal individual tenant-level consumption, the owner receives the information they need to benchmark, while customer data privacy is maintained. As a result, building owners are able to benchmark their buildings using Portfolio Manager, gain a better understanding of a building’s overall energy consumption, and make more informed decisions regarding energy-saving measures. This also provides them with the information they may need to comply with local or state benchmarking and transparency laws.

The Need for Calendarizing Energy Data

Because the process of providing aggregate whole-building data requires the summation of multiple energy meters within a property, utilities providing this service to their customers are often faced with the challenge of combining meter records that have different start and end dates (meter read dates) that can span calendar months. In such cases, it will be necessary for the utility to “calendarize” the data, in order to effectively compile

¹ It is possible for tenants to explicitly authorize their utility to provide consumption data to a third party (such as the building owner or manager), who will then collect the data and enter into Portfolio Manager. However, this type of process can be complicated and time-consuming, and is likely not be a scalable solution.

the aggregate consumption information for the building owner. Different calendarization methodologies exist. However, EPA has established a standard practice by which energy consumption for a given meter read period is allocated to calendar months based on the number of days in the read period that fall in those calendar months. In this way, various meter read periods can be consistently summed into complete, non-overlapping monthly totals, which can be appropriately weather-normalized by Portfolio Manager.

An Example

Let us assume that a multi-tenant property has four total meters (3 tenant space meters; 1 common area meter), which together account for the total energy consumption of the property.² In this scenario, the start and end dates for each meter’s read period are different, and therefore the monthly entries for each meter cannot be added up without first performing calendarization. The table below illustrates the process by which individual meter data should be calendarized and then aggregated for delivery to a building owner.

Table 1: Calendarization Calculations for Multiple Meters

Account	Meter Start Date	Meter End Date	Meter Entry Consumption (kWh)	Days in Month 1	Month 1 Consumption	Days in Month 2	Month 2 Consumption	Monthly Total for	Consumption Used for PM (kWh)
Tenant 1	12/16/2014	1/15/2015	120,000	16	61,935	15	58,065		
Tenant 1	1/16/2015	2/15/2015	117,000	16	60,387	15	56,613	January	118,452
Tenant 1	2/16/2015	3/15/2015	105,000	13	48,750	15	56,250	February	105,363
Tenant 1	3/16/2015	4/15/2015	112,000	16	57,806	15	54,194	March	114,056
Tenant 2	12/11/2014	1/10/2015	80,000	21	54,194	10	25,806		
Tenant 2	1/11/2015	2/10/2015	85,000	21	57,581	10	27,419	January	83,387
Tenant 2	2/11/2015	3/10/2015	75,000	18	48,214	10	26,786	February	75,634
Tenant 2	3/11/2015	4/10/2015	78,000	21	52,839	10	25,161	March	79,624
Tenant 3	12/21/2014	1/20/2015	160,000	11	56,774	20	103,226		
Tenant 3	1/21/2015	2/20/2015	185,000	11	65,645	20	119,355	January	168,871
Tenant 3	2/21/2015	3/20/2015	174,000	8	49,714	20	124,286	February	169,069
Tenant 3	3/21/2015	4/20/2015	180,000	11	63,871	20	116,129	March	188,157
Common Area	12/5/2014	1/5/2015	20,000	26	16,774	5	3,226		
Common Area	1/6/2015	2/5/2015	19,500	26	16,355	5	3,145	January	19,581
Common Area	2/6/2015	3/5/2015	19,200	23	15,771	5	3,429	February	18,917
Common Area	3/6/2015	4/5/2015	21,300	26	17,865	5	3,435	March	21,293

By combining the appropriate monthly kWh values in the “Consumption Used for PM (kWh)” column, the utility can determine the total, aggregate kWh used in each calendar month (see Table 2 below).

² We are also assuming that the utility’s aggregation threshold is three or more tenants – meaning that the utility can provide the building owner with aggregate, monthly whole-building data without prior approval from each tenant.

Table 2: Total Monthly Consumption

Calendar Month	Total Consumption Used for PM (kWh)
January	390,290
February	368,982
March	403,131

In our example, the meter data ultimately provided to the building owner (or uploaded directly into Portfolio Manager via web services) would resemble the data in Table 2. Because of varying meter read periods, it may be necessary for a utility to look at 13 or even 14 read periods for each meter, in order to obtain 12 complete, consecutive months of calendarized data.

As long as this process is performed according to the steps outlined above, then the total usage entered into Portfolio Manager – as well as the metrics generated from this consumption data – will be the same as if the meters had been entered one at a time, directly into Portfolio Manager. In this way, the utility is able to fulfil the owner’s need to benchmark while also protecting individual customer data privacy.

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