CAE-13Q: **CCWG Report, pp. 47-48. For each of the two recommended allowable methodologies for determining the starting utility rate that require a written explanation (customer-specific and software methodology), provide an example of how the methodology and parameters should be explained to customers.**

CAE-13A: Regarding both methodologies, the primary purpose of the proposed written explanation to customers is transparency, specifically explaining what is and what is not included in the calculation. EOE is not so concerned with the format of how the information is provided to customers, but rather that the information is provided to customers in writing and clearly explained to them so that the numbers used to calculate their short- and long-term savings are transparent and understandable. EOE expands below on the language used in the CCWG Report based on discussions in the CCWG as well as its own research and knowledge, yet acknowledges that contractors and customers may benefit when contractors have some discretion to utilize their specific and transparent methodologies for the format in which the information is shared.

a. Customer specific 12-month historical average starting utility rate.

If a contractor calculates a customer specific historical average starting utility rate, the contractor must explain that the calculation is based on the **"all-in" utility rate** on the customer's electric bills for the past 12 months divided by 12 months.

The contractor must explain that the "all-in" utility rate includes charges for

- **supply**,
- **transmission**,
- **public benefits**, and
- **delivery** (which also includes a fixed monthly charge when applicable).

The contractor must explain that the "all-in" utility rate is calculated each month by dividing the Total Monthly Charges (aka Amount Due) on the electric bill by the Total Monthly kWh Usage, e.g. $149.12 / 480 kWh = $0.31 per kWh.

The customer specific 12-month historical average starting utility rate can be calculated by adding together the monthly charges for the past 12 months and dividing by the total kWh used over the last 12 months. One way this could be accomplished in writing is the immediately preceding language. Another way is as follows:

Month	Charges	kWh	
May	$ 228.73	726	
June	$ 225.38	762	
July	$ 277.76	947	
Aug	$ 315.69	1081	
Sept	$ 263.09	899	
Oct	$ 167.51	598	
Nov	$ 145.85	516	
Dec	$ 179.72	643	
Jan	$ 182.31	655	
Feb	$ 189.52	619	
Mar	$ 160.16	518	
Apr	$ 149.12	480	
	$ 2,484.84	8444	$ 0.29

In addition to the above explanation, the contractor must state if any **discounts** are or are not included in the calculation of the customer specific average starting utility rate. If they are included, the contractor must show the calculation without the discount and then with the discount.

If a customer utilizes a third-party supplier, the contractor must explain additional information. Specifically, the contractor must explain how that third-party supply rate differs from the standard service supply rate, i.e. that the third-party supply rate is higher or lower. If the third-party supply rate is higher than the standard service supply rate, the contractor must explain that the solar savings calculations will be artificially inflated and compounded over time (from one to 20 years), and attributed to the solar array, when the savings are not only attributable to the installation of solar. Rather, the contractor must explain that the customer could save $0.xx/kWh simply by switching to the standard service supply rate separate and apart from a solar installation. This is particularly important in the scenario where the customer is paying a higher supply rate because it artificially inflates the savings calculations attributable to the solar system. The opposite is not true; i.e. when the third-party supply rate is lower than the standard service supply rate, the savings are in fact attributable solely to the solar system.

While EOE believes it would be more precise to recalculate the customer-specific average starting utility rate using the standard service supply rate when the third-party supply rate is higher than the standard service supply rate, EOE does not recommend such a

recalculation because it could unnecessarily complicate the customer specific 12-month historical average starting utility rate and, as several contractors stated in the CCWG, could cause more confusion than clarity for many customers.[1] In addition, when a customer continues to pay a higher third-party supply rate if they decide not to install solar, then the "all-in" rate including the third-party supply rate will be their actual costs, and thus will be accurate.

Overall, based on discussions in the CCWG, EOE believes that it is appropriate disclosure regarding the **third-party supply rate portion** of the "all-in" utility rate when the contractor explains to the customer that:

(1) the customer is currently paying $0.xx/kWh more per kWh, e.g. the customer is paying an "all-in" rate of $0.35 per kWh with the third-party supplier when he could be paying $0.31 per kWh with the standard service supply rate; and

(2) the customer's higher supply rate increases the starting utility rate used to calculate savings and will artificially inflate the savings calculations (compounded over time) attributed to the solar system.

With all the above information in writing, and explained clearly and transparently, a customer is able to ask additional questions and run their own calculations, if desired, to ascertain the specific calculations they need to fully understand the financial benefits and costs of installing a solar array.

b. Software methodologies used to calculate average starting utility rate.

There are several software options for calculating savings, all of which include some form of an average starting utility rate from which to create a baseline for savings calculations. When utilizing software, a contractor must share with the customer the methodology the software uses. This first requires that the contractor know and understand the methodology; if a contractor does not know and understand how the software makes calculations, then the contractor should not be using the software because he cannot explain it to the customer. Thus, it is the contractor's responsibility to understand the software he uses; lack of knowledge is not an excuse for failing to explain the methodologies.

Much like the answer to subsection (a) above, **the software methodology must be explained to customers clearly and transparently**. Based on discussions in the CCWG, EOE believes that it is appropriate disclosure regarding the software methodology used to calculate the average starting utility rate when the contractor explains to the customer:

(1) the **exact metrics/parameters** the software uses;
(2) the **source** of those metrics/parameters;
(3) **how the software uses those metrics** to calculate the rate;
(4) whether the customer's **discounts**, if any, are included in the calculation;
(5) that the calculated average starting utility rate may **differ from the rate on the customer's electric bill(s)**; and
(6) what parameters, if any, **are not included** in the estimated calculation, such as non-bypassable charges.

EOE is not familiar with all software available to contractors and does not have access to many of the software applications that require a subscription; nevertheless, following are **examples of how the software methodology can be made transparent** and explained to customers when it is used to calculate the average starting utility rate.

Note that the methodologies stated may or may not be actual methodologies used by software applications. Rather, **they are examples of transparently communicating methodologies to customers**.

If Software Application 1 calculates the average starting utility rate by matching a customer's location and bill data against Software Application 1's tariff database to determine an exact cost per kWh, an example of how to communicate the methodology transparently is as follows:

1. Software Application 1 identifies the property's geographic location (zip code) and utility provider to isolate the applicable rate structures and assigns the specific standard or Time-of-Use (TOU) tariff the customer is likely on (e.g., residential tiered or peak/off-peak rates).

2. A contractor can input detailed hourly interval data or Software Application 1's algorithm estimates a daily and seasonal consumption profile for the customer by taking any historical inputs (e.g., total billed usage or a single dollar amount from a past utility bill) and comparing them against regional, similar-sized building profiles. The contractor must explain if he input data or utilized Software Application 1's estimated data.

3. Software Application 1 then scales this usage to match seasonal variations and TOU factors.

4. Software Application 1 models this consumption profile against the precise rules defined in the assigned utility tariff to tally up the per kWh energy charges, mandatory fees, and demand changes (if applicable).

5. To calculate final $/kWh average starting utility rate, Software Application 1 divides the total calculated utility bill by the total kWh consumption across that specific billing cycle:
   Average starting utility rate = Total calculated bill ($) / Total consumption (kWh)

If Software Application 2 calculates the average starting utility rate (expressed as the average revenue per kWh) by dividing the total revenue collected from customers by all electric utilities in a specific area by the total MW hours, following is an example of how the methodology can be transparently communicated to customers:

1. Software Application 3 obtains three metrics: total revenue from sales; total MW hours sold; and total number of active utility accounts in a specific area, e.g. Connecticut.
2. The formula to determine the average starting utility rate is:
   Average starting utility rate = Revenue (in thousands of $) / Total sales (in MWh)

With the explicit methodology in writing, and explained clearly and transparently, a customer is able to ask additional questions and run their own calculations, if desired, to ascertain the specific calculations they need to fully understand the financial benefits and costs of installing a solar array.

[1] It may be possible to calculate the average starting utility rate by deducting the price difference of the third-party (TP) supplier, as shown in the example below, but it is time consuming and may confuse customers. EOE does not recommend making this kind of calculation mandatory, though it is not opposed to contractors offering this kind of calculation if desired or when a customer requests it.

Month	Charges w TP Supply Rate	kWh	Higher TP Supply Rate/kWh (as a negative)	Higher Charges w TP Supplier (as a negative)	Charges w Standard Service Supply	
May	$ 228.73	726	$ (0.02)	$ (14.52)	$ 214.21	
June	$ 225.38	762	$ (0.02)	$ (15.24)	$ 210.14	
July	$ 277.76	947	$ (0.02)	$ (18.94)	$ 258.82	
Aug	$ 315.69	1081	$ (0.02)	$ (21.62)	$ 294.07	
Sept	$ 263.09	899	$ (0.02)	$ (17.98)	$ 245.11	
Oct	$ 167.51	598	$ (0.04)	$ (23.92)	$ 143.59	
Nov	$ 145.85	516	$ (0.04)	$ (20.64)	$ 125.21	
Dec	$ 179.72	643	$ (0.04)	$ (25.72)	$ 154.00	
Jan	$ 182.31	655	$ (0.04)	$ (26.20)	$ 156.11	
Feb	$ 189.52	619	$ (0.04)	$ (24.76)	$ 164.76	
Mar	$ 160.16	518	$ (0.04)	$ (20.72)	$ 139.44	
Apr	$ 149.12	480	$ (0.04)	$ (19.20)	$ 129.92	
		8444			$ 2,235.38	$ 0.26