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OIR-16-05 Excess or Over Procurement versus Yield

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What is excess or over procurement?

Perhaps some are confusing excess or over procurement with production yield losses.

In a system of power transmission and distribution there are losses that reduce the delivered kilowatt-hours (yield).

Current in any circuit is the same everywhere in the circuit, voltage varies in the circuit, due to voltage drop in wiring (resistance), delivered power is always lower than generated power.

Transformers and switches add to the losses caused by the transmission and distribution wiring. Generation has to increase to make up for these losses. If fossil fuel is used to generate power there are greenhouse gases for each delivered kilowatt-hour.

Perhaps this lower delivered kilowatt-hour is considered by some to mean they had to over procure kilowatt-hours or somehow an excess was generated but not sold at retail or wholesale?

Grid system losses are the reason for the lower kilowatt-hour delivery.

Current is measured in amperage, the movement of electrons. No electrons are produced, electrons are forced to move by the production of an electric charge and a load to consume the energy in the electric charge.

The difference between generation and useful work is called yield and is measured by a watt meter at point of generation and a watt meter at point of use. Divide the watts at point of use by the watts at generation and you will find the yield percentage. Yield is a measurement of production efficiency. Efficiency is first in the loading order in California's efforts to reduce the negative effects of energy use.

Amperage times voltage is wattage, this is known as Watt's law. Ten amps times ten volts is one hundred watts. Ohm's law states that the current through a conductor between two points is directly proportional to the voltage across the two points. The resistance of the conductor is measured in units of ohms. The resistance causes the losses in the power grid. These losses exit the power grid as heat energy dissipated from the point of generation to the point of the load.

The formulas that appear in the express terms ignore system losses that Ohm's and Watt's laws identify and the express terms do not directly identify the efficiency of the whole system. The rules of what is included in greenhouse gases for kilowatt-hours sold at retail do not provide a

true and accurate accounting.

However the legislative body of the Energy Commission votes, Watt's and Ohm's laws are not changed. The calculation of yield (efficiency) is not changed.

The public will be misled as to the effects of their choices in energy use if the legislative body approves the greenhouse gas formulas in the express terms.

Please vote to approve the utility's raw data reporting requirements in the express terms. These data are the amount and type of generation procured and the portfolios offered and amount of retail sales for each portfolio. This reporting burden should be nil because the utility's procurement system and billing system already produce and use this data.

This will allow time to correct the greenhouse gas calculations in the express terms and still deliver the power content label on time to the customer.

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