

Primer: Retail Rate Design and Cost Allocation

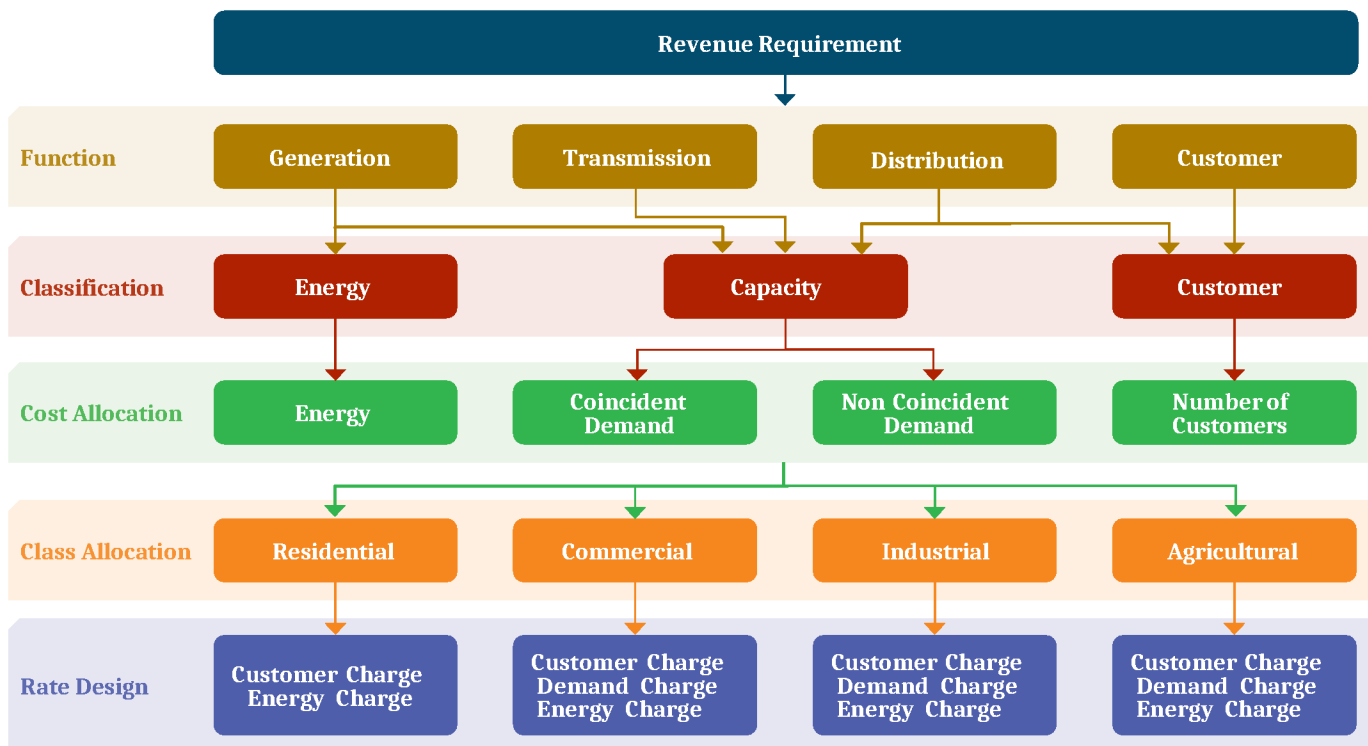
How Are Electric Rates Developed?

Retail rate design is the process through which a utility recovers its total costs from customers. This total cost, known as the revenue requirement, represents the amount the utility must collect to provide reliable service and maintain financial stability. Utilities invest in generation (if vertically integrated), transmission, and distribution infrastructure based on forecasts of future demand and system needs. Under cost-of-service regulation, those investments along with operating expenses are incorporated into the utility's annual revenue requirement and recovered over time through depreciation and an authorized return on invested capital. Utilities also recover purchased power costs, which are typically passed through to customers without earning a return.

Cost-of-service analysis (COSA) determines how that total revenue requirement is allocated across customer classes, with the goal to ensure that costs are allocated to customer

classes in a way that properly reflects underlying cost drivers. The core steps are shown in Figure 1. The process first functionalizes costs by system function (generation, transmission, distribution, and customer-related costs), then classifies them by cost driver (primarily energy-, demand-, or customer-related), and finally allocates them to customer classes based on measures such as energy consumption and contribution to peak demand. These results establish each class's revenue responsibility. Rates are then designed to recover that responsibility through a combination of fixed charges, volumetric energy charges, and demand charges. While COSAs provide a cost-based foundation, final rate structures often balance additional objectives such as affordability, simplicity, and policy goals, meaning that rates may not perfectly mirror pure cost signals.

Figure 1: Utility Rate Design Process³



³ Riu, I., Patel, K., Mettetal, L., Santoni-Colvin, M., Platter, H., Greszczuk, S., Cardona, J., Bertrand, L., Spencer, S., & Ramirez, S. (2025). *Tailored for scale: Designing electric rates and tariffs for large loads: A guidebook of industry best practices and examples from real-world Amazon data center case studies* (White paper). Energy and Environmental Economics, Inc. (E3). <https://www.ethree.com/wp-content/uploads/2025/12/RatepayerStudy.pdf>