

Cost of Service Methodologies

August 31, 2021



Utah Association of Energy Users

Background and Objectives

- **The agenda for the GRID Modernization Second Collaborative Working Group Discussion includes a review of RMP's Cost of Service Methods followed by Generation and Transmission Allocation and Classification**
- **RMP currently allocates generation and transmission costs using a 12 CP 75/25 allocation method**
 - ❖ Most fixed costs are classified as 75% demand-related and 25% energy related
 - ❖ Demand is allocated among customer classes based on the 12 monthly system coincident peaks (12 CP)
- **This presentation provides an overview of potential alternative cost of service methodologies**
 - ❖ Peak demand measures: Is a 12 CP measure appropriate to allocate demand? Or would a different number of coincident peaks more accurately reflect the nature of costs caused on RMP's system?
 - ❖ Generation and Transmission classification: Is the current 75/25 demand and energy classification appropriate or should the energy and demand components utilize a different weighting based on system loads?
 - ❖ Alternative allocation methods: The Average and Excess (A&E) methodology is a robust energy-weighted allocation method
 - ❖ Distribution classification: Does the current distribution classification method properly recognize costs caused by the number of customers on the system?



Coincident Peak Measures of Class Demand

Class demand coincident with the system peak is often used to allocate generation and transmission demand-related costs. The number of coincident peak demands used to allocate demand-related costs can differ depending on the characteristics of the system. Different alternatives include:

- **12 Coincident Peak (12 CP)** – takes the average of the 12 monthly system coincident peak demands during the test year
 - ❖ RMP currently uses this method to allocate demand-related generation and transmission fixed costs
 - ❖ This method is usually used when the monthly peaks lie within a narrow range
- **Summer and Winter Peaks** – takes the average measurement of the summer and winter system coincident peaks
 - ❖ This method can be appropriate when the summer and winter peaks are close in value and both peaks affect generation planning
 - ❖ May utilize 6 coincident peaks, 3 summer and 3 winter months, or some other variation of summer and winter peak hours
- **1 Coincident Peak** – takes the single highest coincident system peak during the test year
 - ❖ This method can be appropriate when generation capacity planning is driven by the need to meet the system's single highest peak load
- **Multiple Coincident Peak** – may utilize any number of monthly system coincident peaks
 - ❖ Depending on the nature of the system loads, a different number of coincident peaks may be used to reflect the drivers of system cost

UAE recommends that the appropriate measure of peak demand should be re-examined through this collaborative effort



Generation and Transmission Classification

Generation and transmission costs are classified between demand and energy. Demand-related costs are allocated using a measure of demand while energy-related costs are allocated based on energy usage

- **RMP currently classifies generation and transmission fixed costs as 75% demand-related and 25% energy related**
 - ❖ Demand-related costs are allocated using 12 CP
 - ❖ Energy-related costs are allocated based on energy usage

UAE recommends that the collaborative examine whether a lower relative energy weighting would more appropriately reflect system loads and conditions



Average and Excess (A&E)

The A&E method is a well-established and commonly accepted energy weighted cost allocation method that can properly be used to allocate a utility's entire generation fleet

- **As described by the NARUC Manual, the A&E method allocates costs based on the average energy usage and a measure of excess demand**
 - ❖ The NARUC Manual prescribes the use of non-coincident peak to measure class demand. However, other measures of coincident peak demand, such as 4 CP, can often be used instead
 - ❖ Class excess demand is utilized to allocate the demand-related costs. Class excess demand is equal to the class peak demand (i.e. NCP or 4 CP) less the average demand
 - ❖ The proportion of costs classified as energy and allocated on an energy basis is equal to system load factor. The proportion of costs classified as demand-related is equal to 1 minus the system load factor
- **A key difference between RMP's current 12 CP 75/25 methodology and the A&E method is that the former allocates demand-related costs based on peak demands, while the A&E method uses a measure of excess demand**
 - This mitigates concerns that peak demand methods, like the 12 CP 75/25, "double-weight" the energy usage when allocating costs

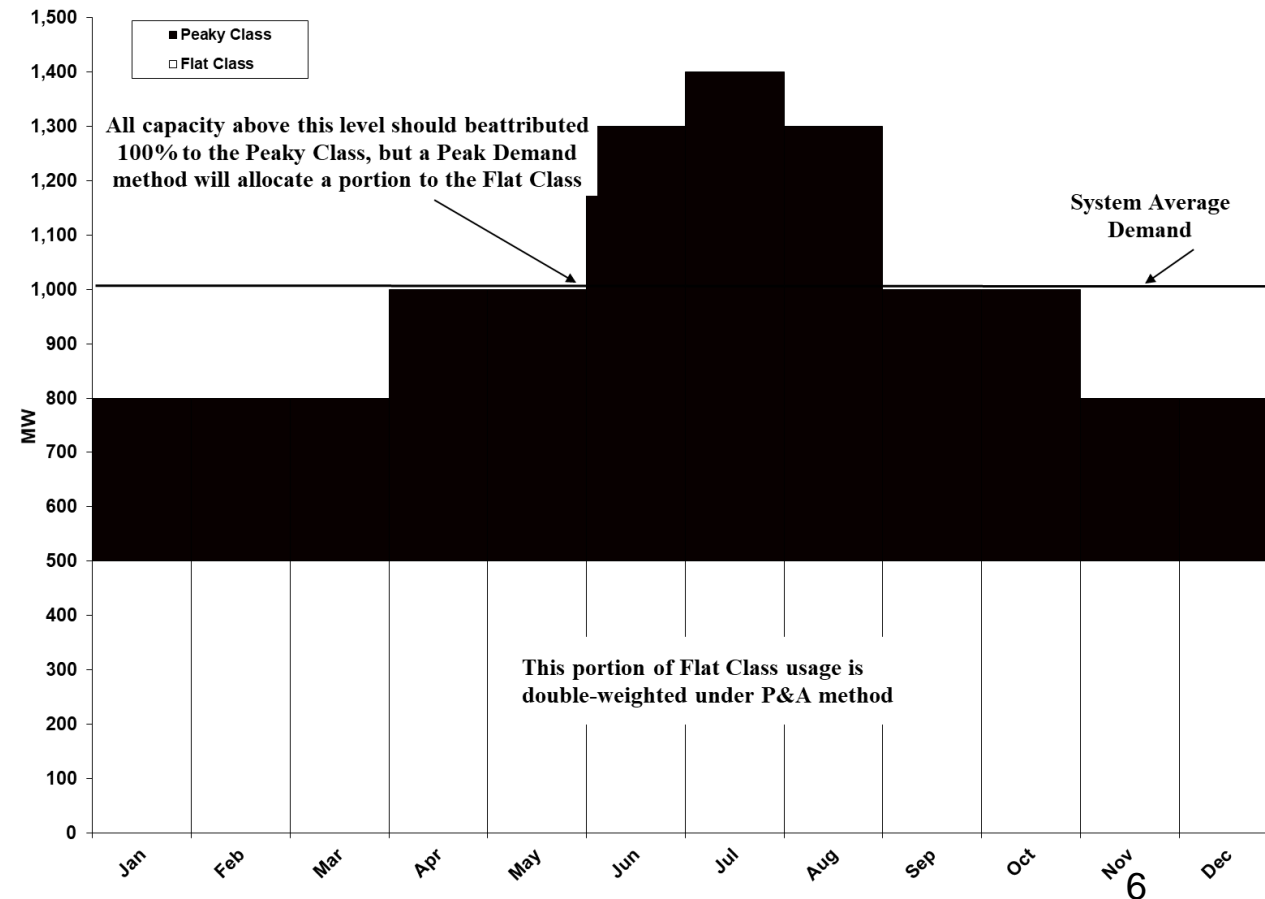


Peak Demand “Double-Weighting” Example

- Assume a simple two class system with a Flat class and a Peaky class. The demand of the Flat class is shown on the bottom. The Peaky class demand is stacked on top of the Flat class demand
- The average demand, representing the energy usage, for each of these classes is 500 MW, resulting in 1,000 MW average demand for the two-class system

	Flat Class	Peaky Class
<i>Average Demand</i>	500 MW	500 MW
1 CP	500 MW	900 MW
12 CP	500 MW	500 MW

- A Peak Demand allocation method, like the 12 CP 75/25, will allocate each of these classes 50% of the responsibility for the average demand, or energy usage, portion of costs
- The system peak occurs in July → all incremental capacity required above the system average 1,000 MW is caused by the Peaky class
- However, a Peak Demand allocation method will not allocate the full cost of the incremental capacity to the Peaky class → instead it allocates incremental capacity based on total demands
 - ❖ The 12 CP 75/25 method would allocate 50% of this incremental demand to each class
 - ❖ If a 1 CP were used to allocate demand-related costs, the Flat class would receive 5/14 allocation of the incremental capacity while the Peaky class would receive a 9/14 allocation



Distribution Classification

It is commonly accepted in the industry that while the distribution facilities and costs are caused in part by the demands on the system, a substantial portion of these costs related to poles, wires and transformers are also caused by the number of customers on the system.

- RMP currently classifies meters and service lines as customer-related, while all other distribution costs are considered 100% demand-related
- This practice does not recognize that a significant portion of the investment in these facilities is related to the number of customers on the system

UAE recommends that a classification method such as the Minimum Size Method or Zero-Intercept Method, as outlined in the NARUC Manual, be considered in order to properly recognize the customer component of distribution facility cost causation

Classification of Distribution Plant*

FERC Uniform System of Accounts No.	Description	Demand Related	Customer Related
	Distribution Plant ²		
360	Land & Land Rights	X	X
361	Structures & Improvements	X	X
362	Station Equipment	X	-
363	Storage Battery Equipment	X	-
364	Poles, Towers, & Fixtures	X	X
365	Overhead Conductors & Devices	X	X
366	Underground Conduit	X	X
367	Underground Conductors & Devices	X	X
368	Line Transformers	X	X
369	Services	-	X
370	Meters	-	X
371	Installations on Customer Premises	-	X
372	Leased Property on Customer Premises	-	X
373	Street Lighting & Signal Systems ¹	-	-

*Source: NARUC Manual at 87

Questions?

