



Key Topics in AE's Cost of Service Study: Customer Class Consolidation Cost Allocation Methods

*Before the Electric Utility Commission
March 21, 2011*





Cost of Service

- Cost of service is an analysis of what it costs to run the utility and whether each customer class is paying what it costs to serve them
 - **Things have changed over last 17 years**
 - **Starting point for designing new rate structures**





Why is AE Proposing to Consolidate Customer Classes?

- ▶ Best Practices
 - ▶ Cost of service analysis / meaningful results
 - ▶ Sustainable framework
 - ▶ Fairness and equity among customer classes
 - ▶ Improve understanding of cost of service and rates
- ▶ 24 Customer Classes Currently Exist
 - ▶ 89 rates





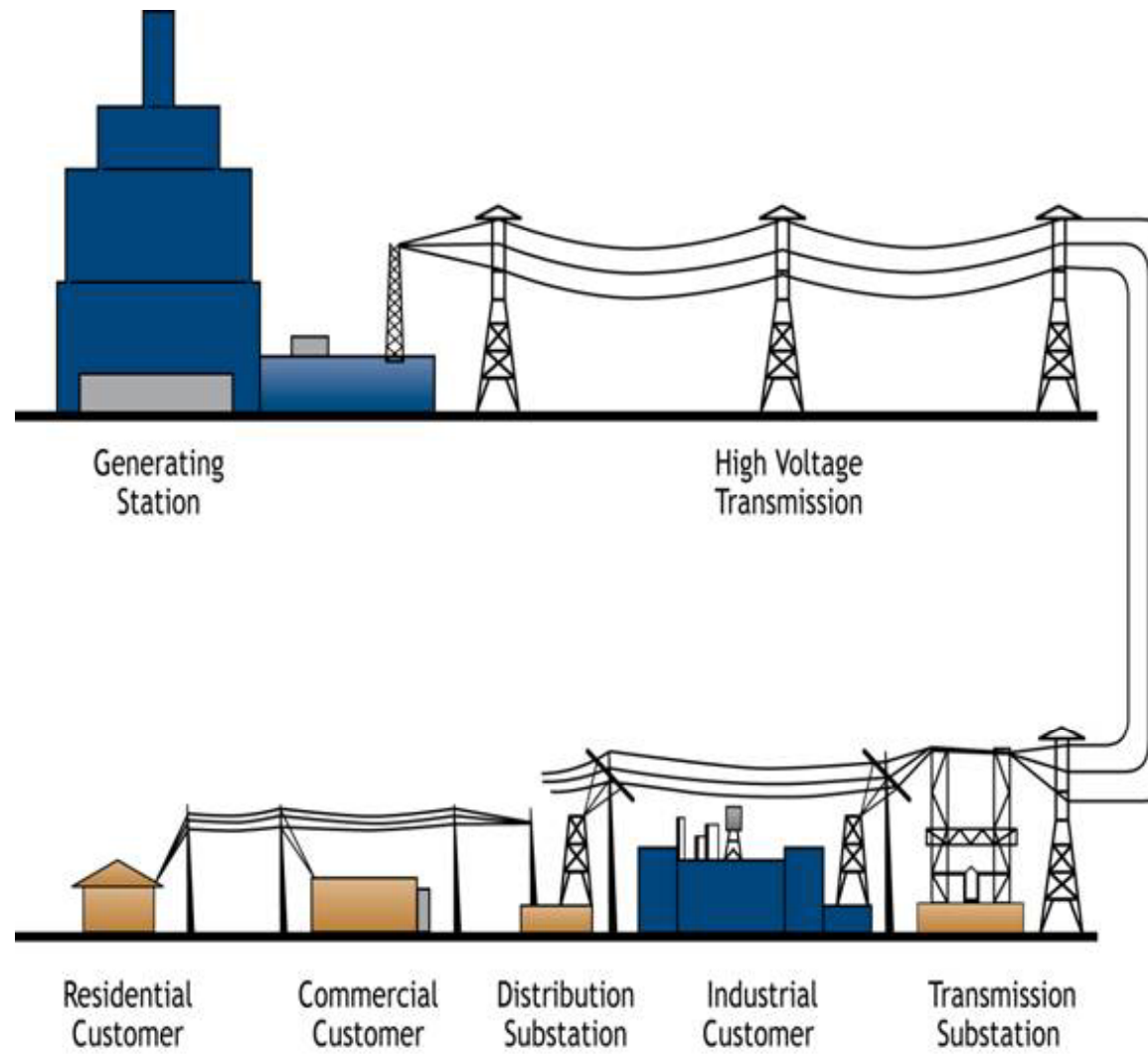
What Distinguishes Customer Classes?

- ▶ Group by Meaningful Differences in Cost to Serve Customers
 - ▶ Similar Service Requirements
 - ▶ Similar Electricity Usage Characteristics, i.e., consumption level and usage patterns
 - ▶ Load Factor
 - ▶ Bill Frequency
 - ▶ Load Profile





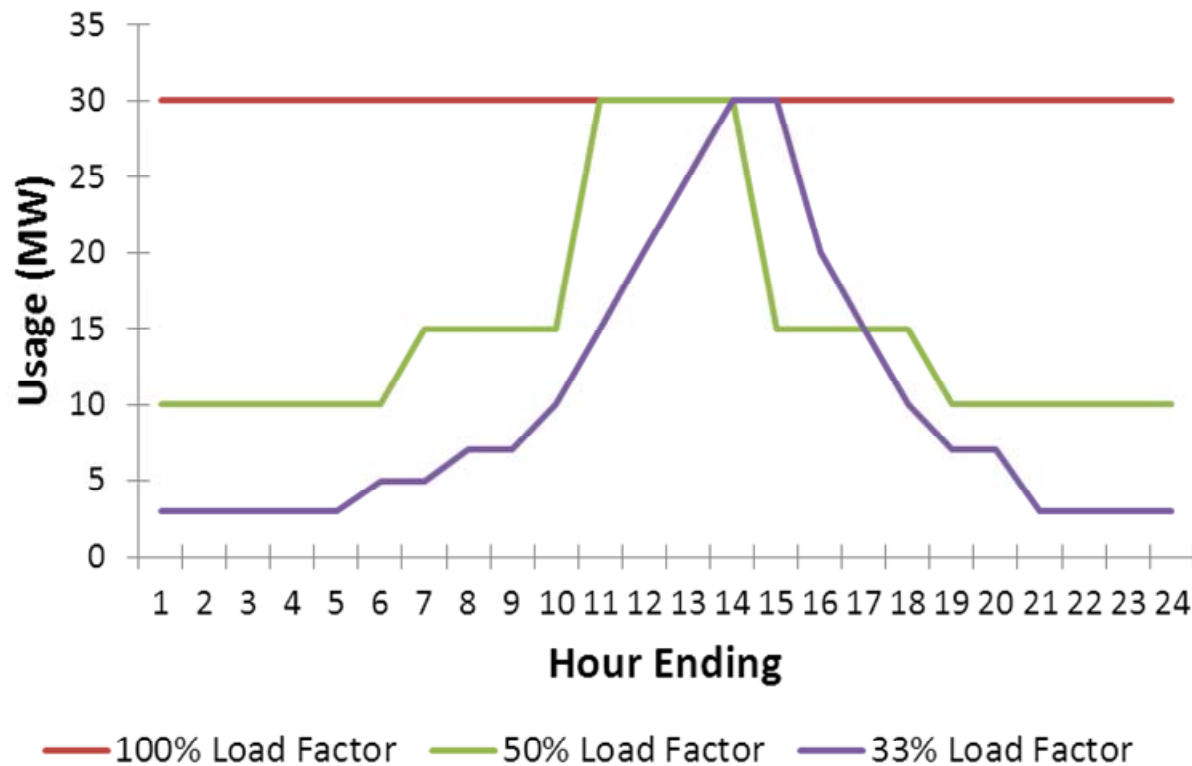
Customer Class – Service Requirements





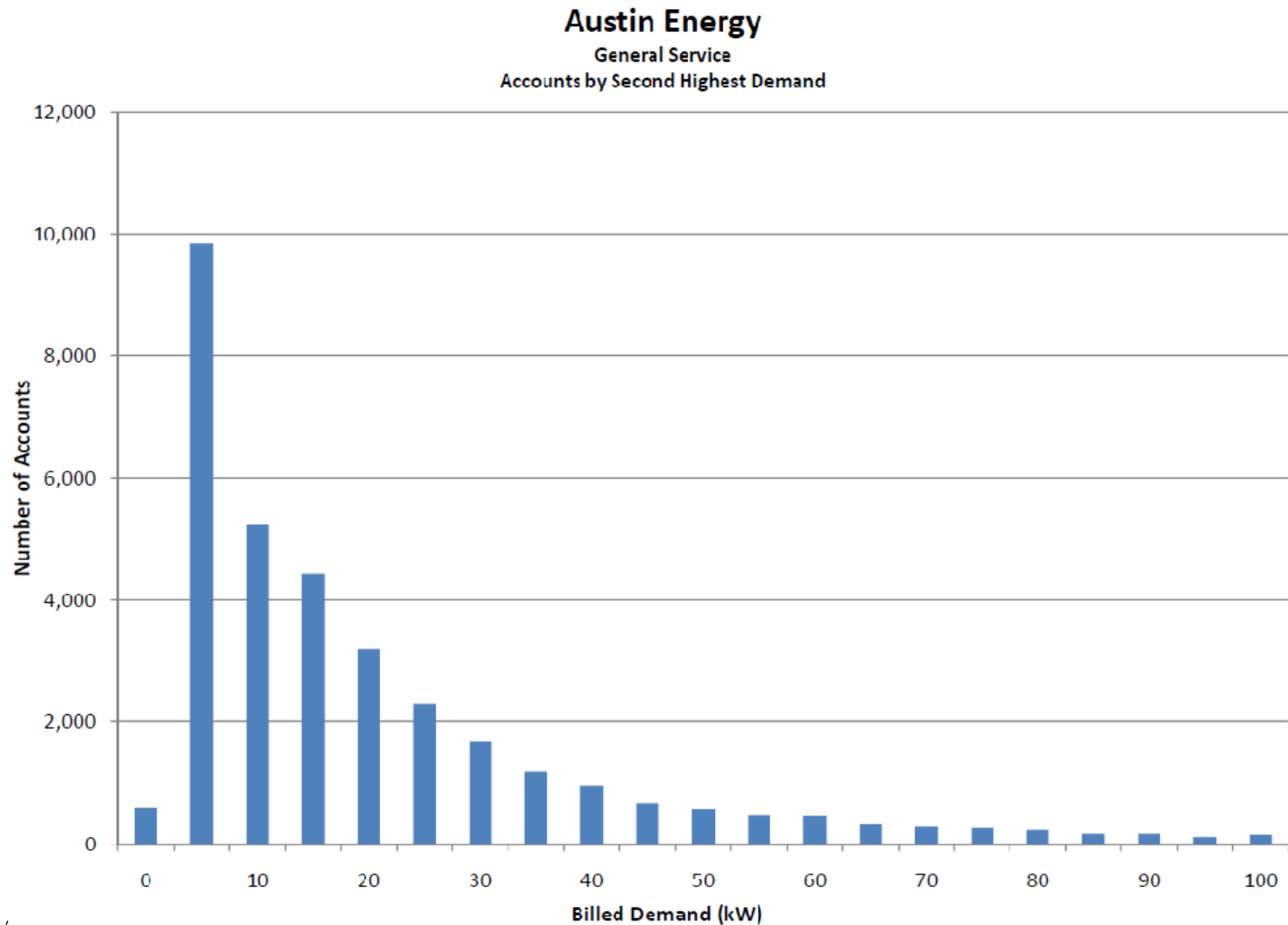
Usage Characteristics – Load Factor

Various Load Factors for a 30 MW Customer





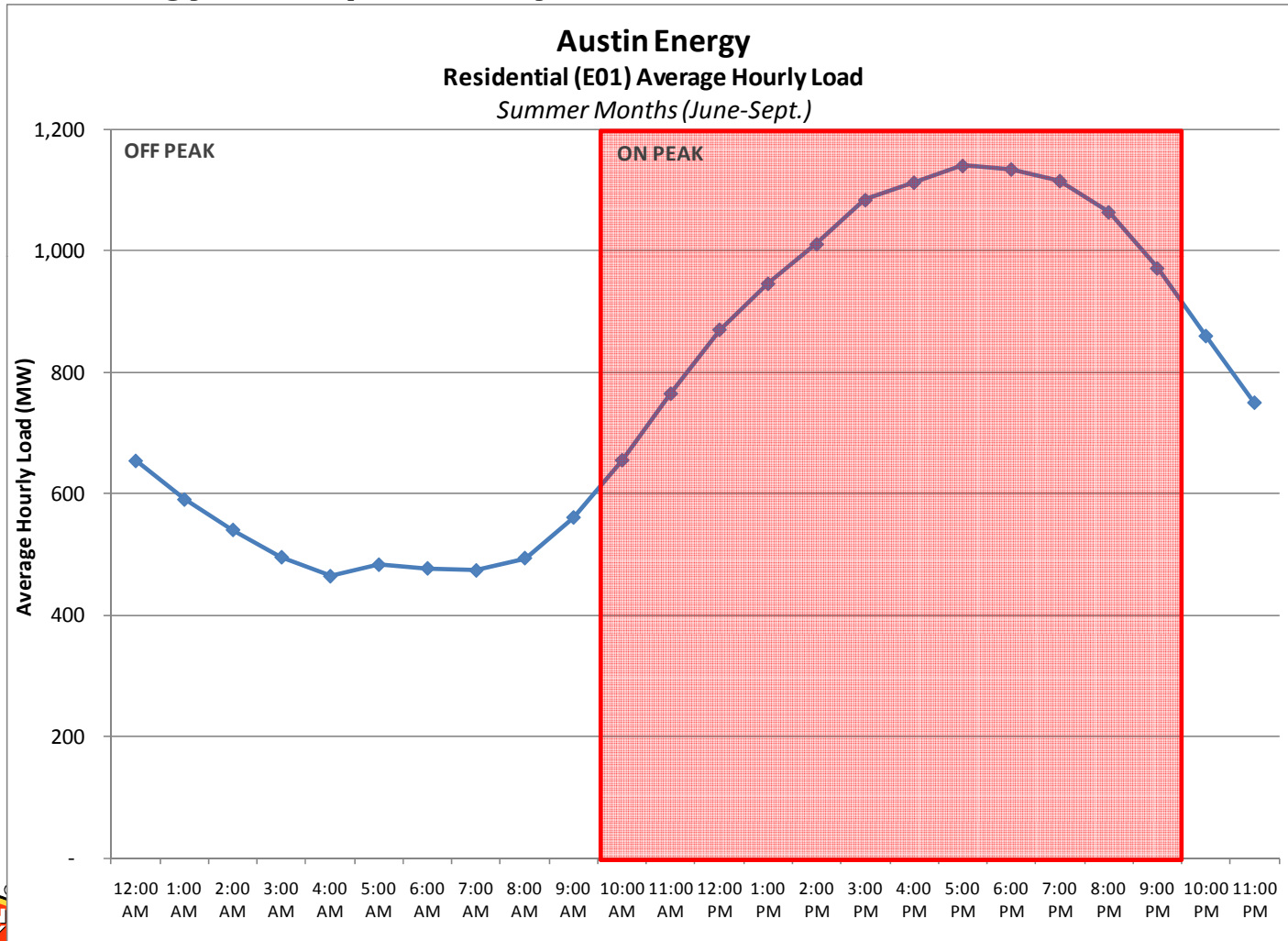
Usage Characteristics – Bill Frequency





Usage Characteristics – Load Profile

Austin Energy Example Hourly Load Profile for Residential Customers





Recommended Consolidated Customer Classes

- ▶ Meaningful break at General Service Secondary <10 kW and other General Service Secondary classes based on cost of service
- ▶ Residential and General Service <10 kW have similar cost of service
- ▶ Created an additional break in Primary >20 MW
- ▶ Combine specialized customer classes into comparable general class.

Residential

General Service <10 kW

General Service 10 – 49 kW

General Service >50 kW

Primary Service <3 MW

Primary Service 3-20 MW

Primary Service >20 MW

Transmission

Lighting





Characteristics of Consolidated Classes

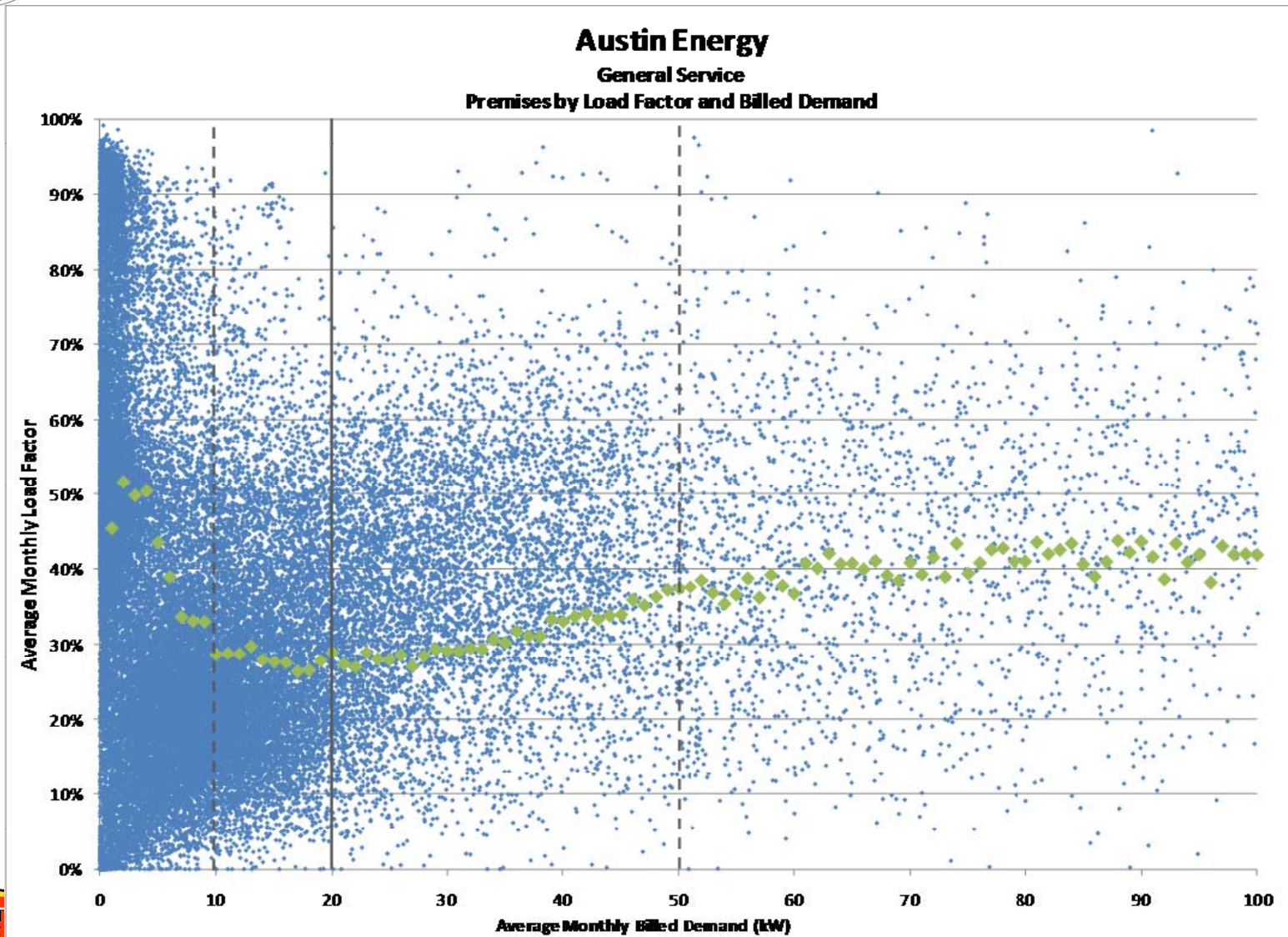
Proposed Customer Classes	Residential	General Service <10 kW	General Service 10 – 49 kW	General Service >50 kW	Primary Service <3 MW	Primary Service 3-20 MW	Primary Service >20 MW	Transmission	Lighting
Average Annual No. of Bills	368,411	32,119	10,082	3,139	48	21	4	3	41
Example Customer Type	Home, Apartment, Condo	Small Business, Condo, Billboard, ATM, Portables	Worship, Auto Repair, Small Office, Retail, Restaurant, Nail Salon, Small School, Daycare	Worship, Soup Kitchen, Large Office, High Rise, Big Box Retail, School, Hotel	Large Grocery, Big Box Retail, Large Offices, School, Small Industrial, Light Mfg.	Hospital, Datacenter, Large Mfg, University, High Tech	Semi-conductor	Industrial	Street Light, Security Light, Traffic Light, Parking Lot, Ballpark
Average Monthly Load Factor	54%	51%	58%	68%	77%	88%	94%	89%	38%



Preliminary: Results subject to review, correction & change.

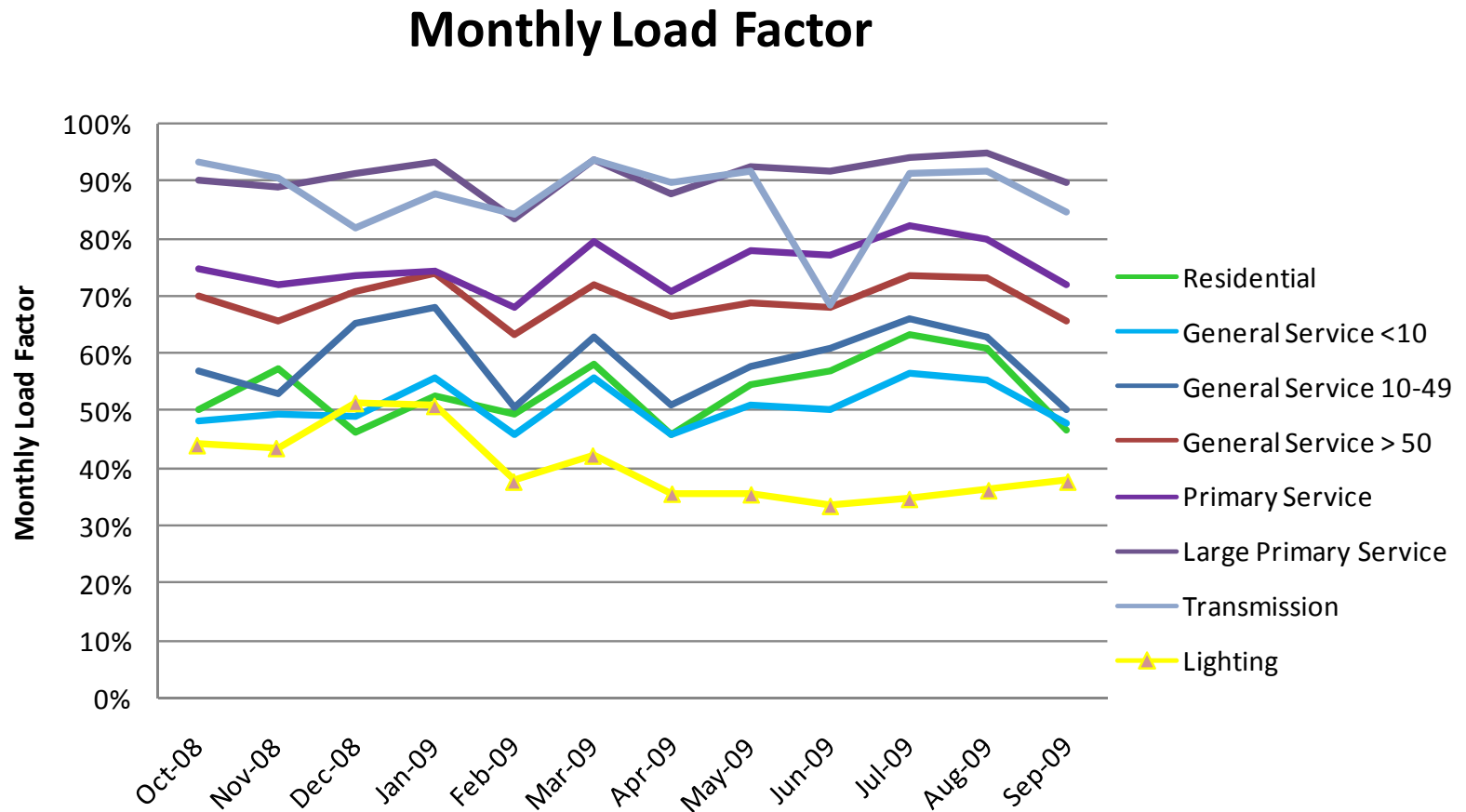


General Service Secondary Break Point Analysis FY 2009



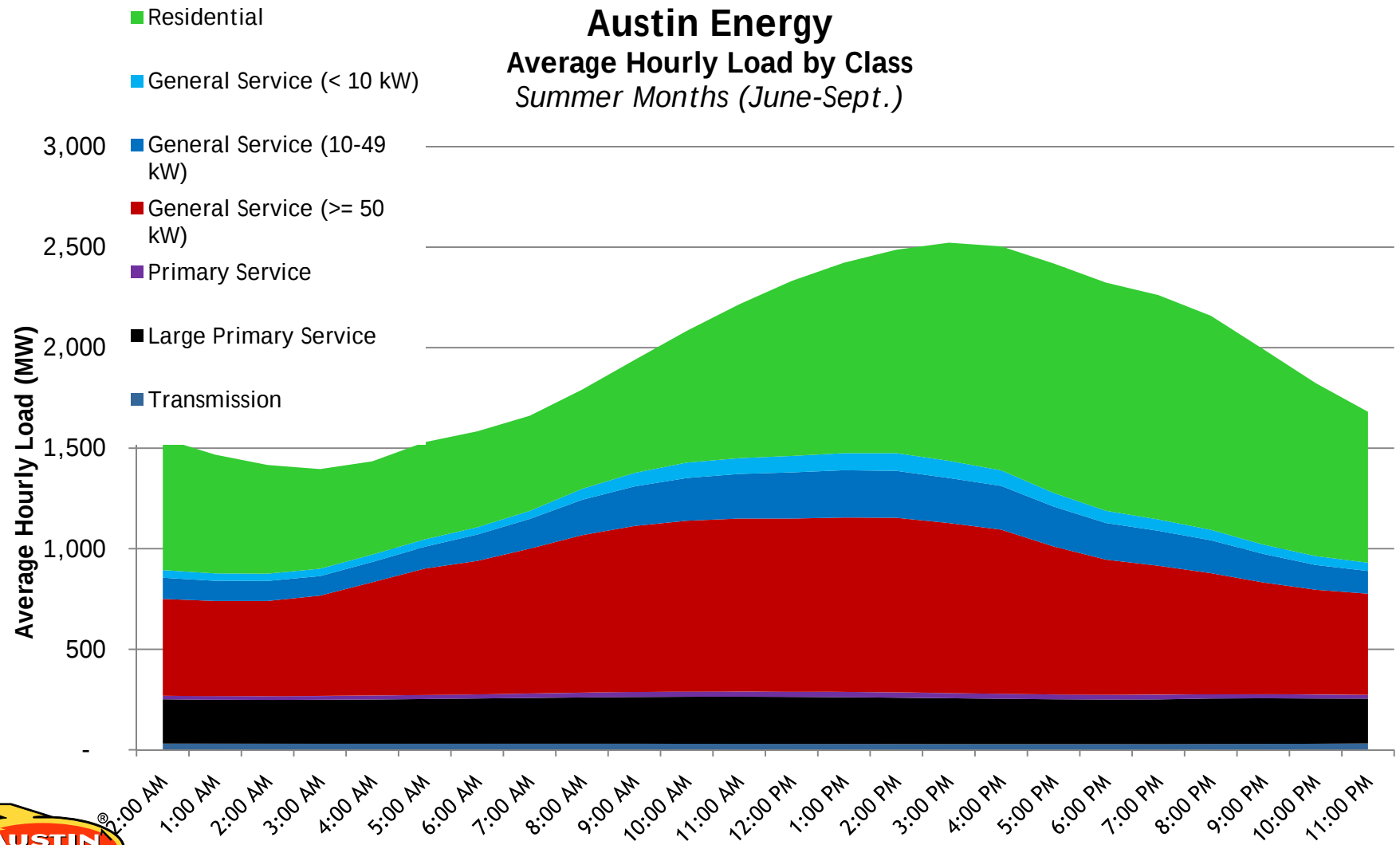


Proposed Classes Monthly Load Factor FY 2009





Proposed Transmission Class Contribution to Hourly Load Shape – FY 2009



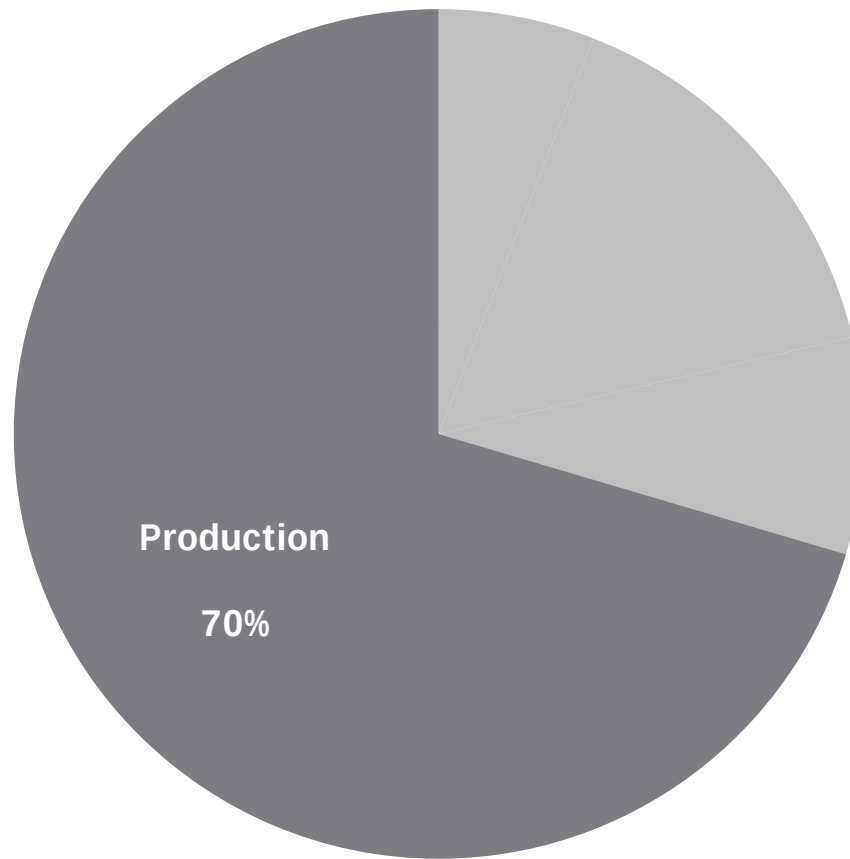


PRODUCTION FUNCTION





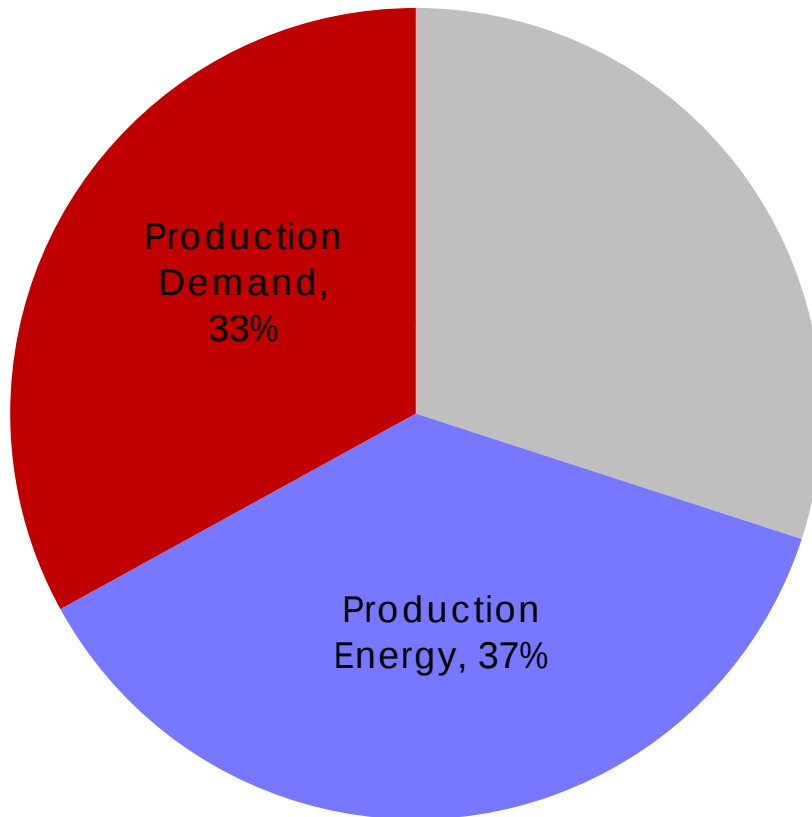
Production Function



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Production Details: Energy and Demand Related



Demand includes:

- O&M
- Debt Service
- Capital

Energy includes:

- Fuel
- Purchase Power



Preliminary: Results subject to review, correction & change.



Production Function

Demand Allocation Methods:

- ▶ Demand Responsibility
 - ▶ 4 Coincident Peak (4 CP)
- ▶ Energy Weighting
 - ▶ Average & Excess (A&E)
- ▶ Time-Differentiated
 - ▶ Baseload Intermediate Peak (BIP)
 - ▶ Probability of Dispatch (POD)





Probability of Dispatch (POD) Method

▶ Policy set by 1997 City Council Resolution

"That the staff is directed to prepare all future proposals in rate proceedings at the municipal level using Probability of Dispatch (POD), and in its discretion may use other cost of service methods in addition to POD"

▶ POD-Hourly analysis of generation & load

- ▶ Generation dispatched by AE to serve system load prior to Nodal
- ▶ Generation dispatched to Nodal market by ERCOT

▶ POD policy inconsistent with the way production costs are incurred

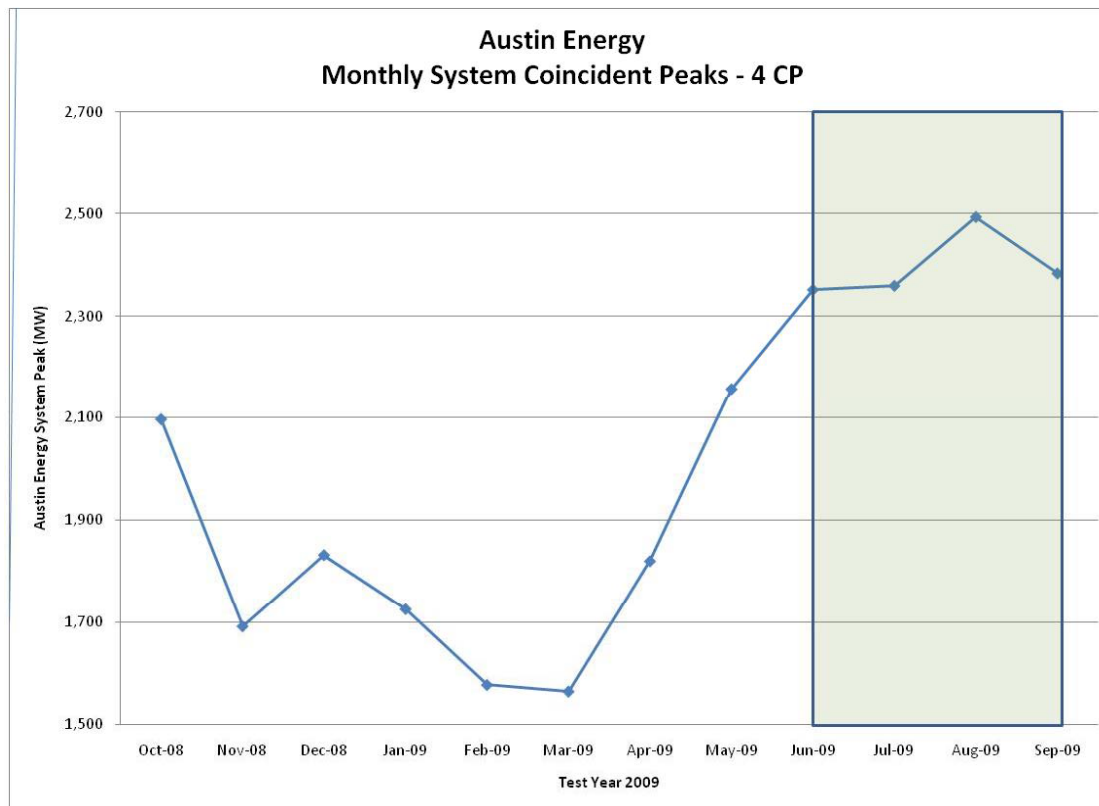
▶ Baseload Intermediate Peak (BIP) is similar





Four Coincident Peak (4CP) Method

Rationale: Generation capacity is required to meet peak system demand



Process: Costs are allocated to customer classes based on the class contribution to the system peak.

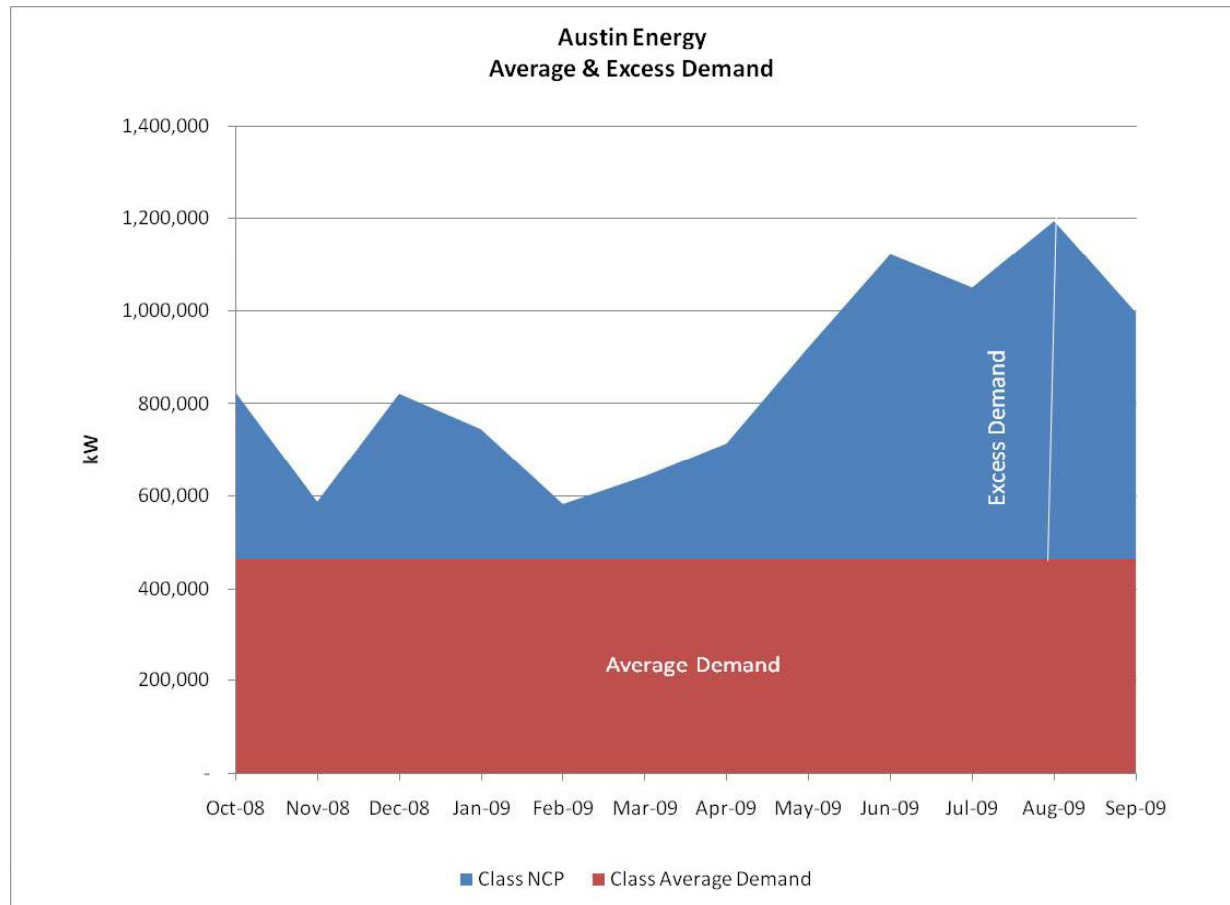


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Average & Excess Demand (A&E) Method

Rationale: Generation provides value during peak and non peak periods.



Process: Costs are allocated to customer classes based on the mix of class Average Demand and Excess Demand.

Average Demand is allocated on Energy.

Excess Demand is allocated on Coincident Peak.

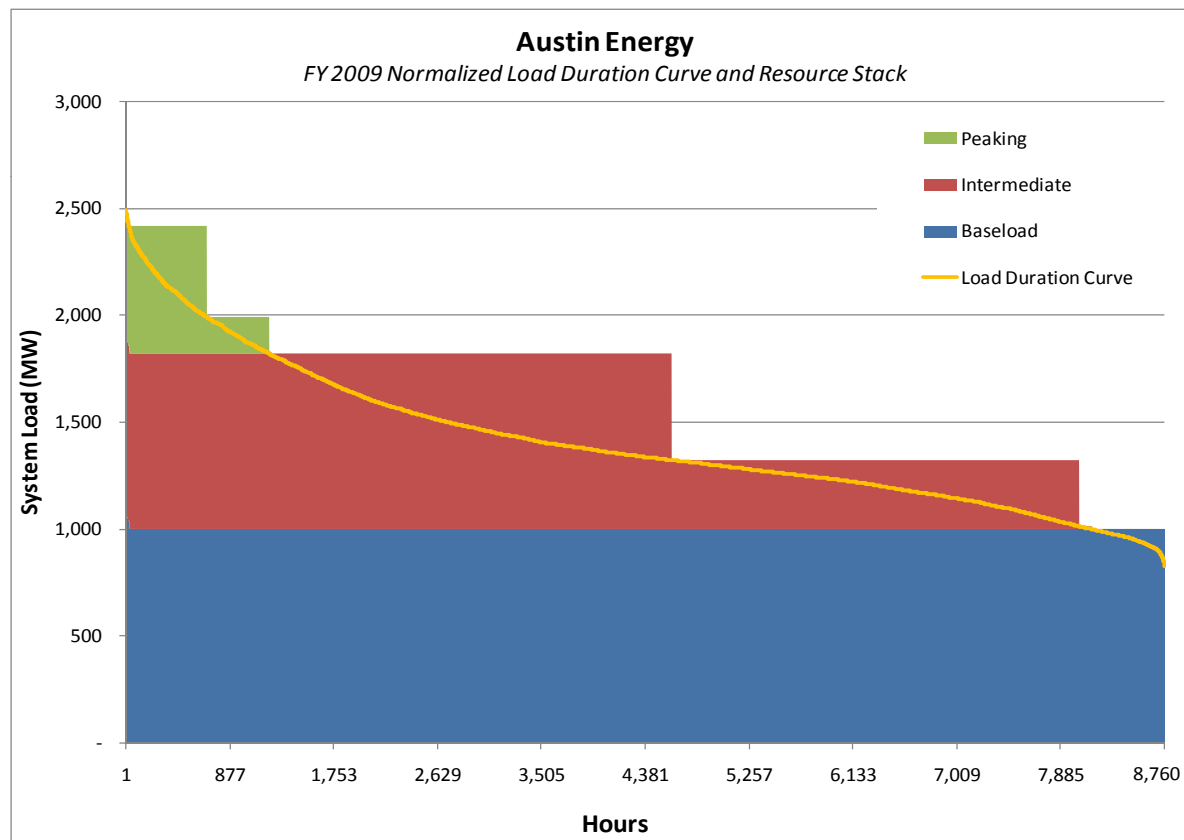


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Baseload Intermediate Peak (BIP) Method

Rationale: Based on the underlying design and use of each type of generation by each customer class.



Process: Costs are subfunctionalized into baseload, intermediate and peaking generation.

Baseload is allocated to customer classes based on energy.

Intermediate and peaking generation are allocated to customer classes based on Coincident Peaks (CP).



Preliminary: Results subject to review, correction & change.



Next Steps

- ▶ AE staff to develop draft RCA to revise POD resolution
- ▶ EUC review of draft RCA at April meeting
- ▶ AE to develop recommendations over the summer
- ▶ Fall EUC Rate Review and recommendations to Council

