MidAmerican Energy Company

Cost of Service Presentation

June 12, 2007

Functional Cost of Service

- MEC’s cost of service is done by function.
  - Generation
  - Transmission
  - Distribution
    - Wires
    - Substations
    - Services
    - Meters
    - Customer Service
    - Lighting
- Revenue requirements are calculated separately for each category with a common set of assumptions and ROE.
- Categories are allocated across customer groups using a single allocator.

Customer Class Definitions

2006 Iowa Revenue (millions)

	Revenue	$/kWh
Residential Base	$389.7	$.0872
Residential Heat	$39.0	$.0635
SGS – Energy Base	$97.1	$.0841
SGS – Energy Heat	$7.4	$.0567
SGS – Demand Base	$146.5	$.0592
SGS – Demand Heat	$13.7	$.0455
MGS – Base	$208.4	$.0420
MGS – Heat	$27.9	$.0382
LGS	$98.1	$.0356
Public & Security Lighting	$15.8	$.1409
Public Authorities	$2.6	$.0599

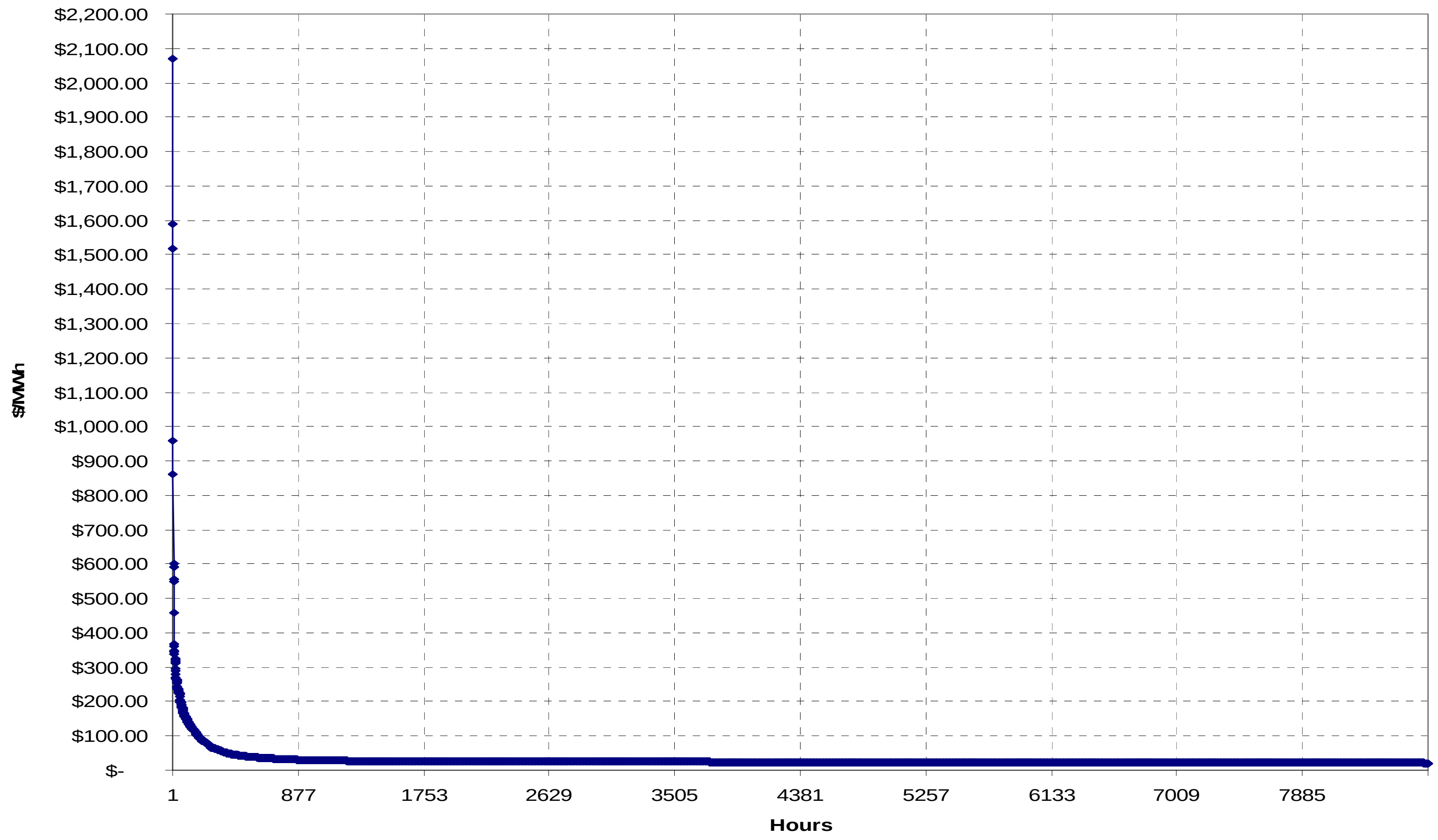
Individual Customer Cost of Service

- Breakout of large general service class into a cost of service analysis for each individual customer
  - Individual load shape analysis for generation and transmission costing
  - Consideration of specific facilities used to serve each customer in determining distribution cost of service
  - Results can serve as the basis for future rates

Generation – Hourly Costing Model (HCM)

- HCM is MEC's preferred approach
- Time-based approach to generation cost of service and rate design
- Assigns costs (fixed + variable) to all MWh in the retail system load curve and customers who use those MWh pay those costs.
- Costs in any hour are reflective of the generation being used to provide service in that hour.
- In any given hour, all customer classes using energy in that hour pay the same price.
- Differences in annual $/MWh cost to different classes is a function of annual load shape and variation in hourly costs.
- HCM is a pricing and costing model, not a class allocation model.

HCM – Hourly Cost Profile



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HCM – Pros and Cons

- Pros:
  - Best model at reflecting the true cost of generation in rates
  - Can be used directly in rate design
  - Intuitive
  - Model is stable
- Cons:
  - Data intensive
  - Can be difficult to audit

Two Approaches to HCM

- Cost-based approach
  - Basis for the hourly costs is the actual fixed and variable costs associated with MEC's portfolio
- Market-based approach
  - Substitutes hourly spot prices for the actual costs of the generation portfolio

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Generation – Average and Excess (A&E)

- Traditional allocation methodology used for generation costs
- Previously approved on numerous occasions by the IUB and in other states
- A&E by customer class is calculated as the weighted average of
  - Customer class average demand
  - Customer class excess demand (NCP – average)
  - Weights are based on system load factor

A&E – Pros and Cons

- Pros:
  - Traditional model
  - Calculations are less complex
  - Easy to audit
- Cons:
  - Methodology is based entirely on load factor and does not consider time of use
  - Does not work well for all classes
  - Does not reflect the tradeoff of fixed versus variable costs between peaking and baseload units
  - More sensitive to changes in
    - Assumptions
    - Weather

Generation – Single Coincident Peak (CP)

- Single CP is based on the assumption that all generation assets are built to serve peak demand and therefore should be allocated to customers based on demand at time of peak
- Although CP is not consistent with 199 IAC 20.10(2)c. (in our opinion), it has nevertheless been proposed by certain intervenors in Iowa in the past
- Twelve CP methodology (sum of 12 monthly class coincident peaks) is commonly used in many jurisdictions

CP – Pros and Cons

- Pros
  - Easy to calculate
- Cons
  - Methodology does not consider load factor or time of use
  - Inherently unstable and very dependant on specific conditions at the time of peak (less so for 12 CP)
  - Does not reflect the tradeoff of fixed versus variable costs between peaking and baseload units

Allocation Methodologies – Comparison of Results

2006 Iowa Generation Cost of Service (millions)

	HCM	A&E	Single CP	12 CP
Residential Base	$176.7	$228.4	$278.3	$198.7
Residential Heat	$20.4	$28.3	$20.0	$23.7
SGS – Energy Base	$40.7	$42.0	$44.6	$43.0
SGS – Energy Heat	$4.1	$5.2	$3.3	$4.7
SGS – Demand Base	$84.4	$72.3	$79.4	$84.4
SGS – Demand Heat	$10.0	$9.1	$9.0	$10.7
MGS – Base	$163.3	$134.3	$119.9	$148.5
MGS – Heat	$24.1	$21.0	$20.3	$25.1
LGS	$86.6	$69.5	$39.1	$73.4
Public and Security Lighting	$3.2	$3.6	-	$2.4
Public Authorities	$1.4	$1.5	$0.9	$1.1

Note: Figures shown are for illustrative purposes only and are not intended to be test-year quality data.

Generation –
Significant Issues

- Customer class allocation of wholesale margins
- Zonal cost of service

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Customer Class Allocation of Wholesale Margins

- Under HCM, allocation of the credit for wholesale costs and revenues is integrated into the total generation revenue requirement and no direct treatment is required.
- Under A&E or CP, allocations of wholesale costs and revenues is separate and explicitly determined.
  - Typically allocated to customer classes based on total retail sales
  - Justified on the rationale that because total fuel costs (retail + wholesale) are allocated to customer class based on total sales, wholesale revenues should also be allocated based on total sales.
  - Subjective assumptions are required.

Allocation of Wholesale Margins – MEC's Position

- MEC believes that the typical approach to allocation of wholesale margins is inappropriate
  - Does not recognize that some classes are assigned significantly more "excess" capacity because of their load factor, and therefore have greater ability to make wholesale sales.
- MEC's position will be that under A&E or CP, allocation of wholesale revenues and fuel cost should be allocated based on the "excess" component of the A&E to better reflect each classes' contribution to excess capacity from which wholesale sales can be made.

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Class Allocation of Wholesale Margins - Comparison of Results

2006 Iowa Generation Cost of Service (millions)

	Traditional Allocation	Corrected Allocation
Residential Base	$228.4	$195.0
Residential Heat	$28.3	$25.1
SGS – Energy Base	$42.0	$41.1
SGS – Energy Heat	$5.2	$4.9
SGS – Demand Base	$72.3	$78.4
SGS – Demand Heat	$9.1	$9.7
MGS – Base	$134.3	$151.3
MGS – Heat	$21.0	$23.0
LGS	$69.5	$81.3
Public and Security Lighting	$3.6	$3.9
Public Authorities	$1.5	$1.2

Note: Figures shown are for illustrative purposes only and are not intended to be test-year quality data.

Note: Results assumes A&E as the base allocator.

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Zonal Cost of Service

- Typically, cost of service and revenue requirements are not done on a zonal basis because necessary accounting records are not kept by zone.
- We anticipate that some may want a zonal cost of service analysis that shows that costs and revenue requirements by zone support the changes in rates that would be needed to achieve uniformity across the MEC system.

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Can Zonal COS Be Done?

- Zonal cost of service can't be done for distribution and transmission because necessary data doesn't exist.
- Zonal cost of service could be done for generation
  - Theory would be that generation assets that were assigned to predecessor companies prior to any merger should remain with customers in those pricing zones until that generation is no longer used.
  - New generation built or acquired post-merger would be allocated to all customers without regard to zone.

Zonal Cost of Service – Comparison of Results

2006 Iowa Revenue (millions)

	Current Revenue	Revenue Requirement Under Traditional COS	Revenue Requirement Under Zonal COS
East	$279.9	$264.9	$270.2
South	$510.7	$487.9	$501.3
North	$255.7	$293.5	$274.7

Note: Figures shown are for illustrative purposes only and are not intended to be test-year quality data.

Note: Results assume HCM as the generation cost allocator.

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Transmission

- A&E is traditional allocation methodology (goes with generation).
- Under OATT, costs are allocated to transmission customers on a monthly load-ratio basis (essentially a 12 CP).
- MEC proposes to allocate transmission costs in COS to customer class based on 12 CP methodology.
- Practical effect on rates should be minimal, but it is a change from traditional methodologies

Transmission Allocators – Comparison of Results

2006 Iowa Transmission Cost of Service (millions)

	A&E	12 CP
Residential Base	$28.6	$24.0
Residential Heat	$3.5	$2.9
SGS – Energy Base	$5.1	$5.2
SGS – Energy Heat	$0.6	$0.6
SGS – Demand Base	$8.6	$10.2
SGS – Demand Heat	$1.1	$1.3
MGS – Base	$15.7	$18.0
MGS – Heat	$2.5	$3.0
LGS	$8.1	$8.8
Public and Security Lighting	$0.5	$0.3
Public Authorities	$0.1	$0.1

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Distribution

- MEC proposes no changes to allocation methodologies for substations, service drops, metering, and customer accounting costs from traditionally accepted methods
  - Substations – Class NCP
  - Services, metering, and customer accounting – Weighted average number of customers (weighted by current cost of typical installation or by current cost to serve)
  - We believe these methodologies are appropriate
- For distribution wires, we anticipate two potential alternative methodologies

Distribution Wires – Single Allocation

- Under this methodology, all wires costs are allocated to classes based on non-coincident peak demand
  - Easy to calculate and audit
  - Assumes all classes use the distribution system relatively equally

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Distribution Wires – Primary/Secondary Allocation

- Wires costs are allocated to customer class separately for primary and secondary wires system.
- Percentage of the distribution system that is primary/secondary is estimated.
- Primary component is allocated to all classes based on NCP
  - All customers use the primary backbone
- Secondary component is allocated to customer class based on the NCP of customers in that class taking service at secondary voltage.
  - Ratio of total sales at secondary meters (available through detailed account by account analysis) to total class sales is used to estimate class NCP at secondary.

Distribution Wires – Primary/Secondary Allocation

- Pros and cons
  - Provides for a more precise and accurate allocation of distribution costs to customer class
  - Requires two major calculations not required in the single allocation methodology
  - Somewhat more difficult to audit
  - Better reflection of how the distribution system is used
- MEC has traditionally used the separate allocation methodology

Distribution Wires – Comparison of Results

2006 Iowa Distribution Wires Cost of Service (millions)

	Single Allocation	Primary/Secondary Split
Residential Base	$82.1	$103.1
Residential Heat	$10.0	$12.3
SGS – Energy Base	$14.2	$13.2
SGS – Energy Heat	$1.8	$1.6
SGS – Demand Base	$23.2	$16.6
SGS – Demand Heat	$2.9	$2.1
MGS – Base	$41.7	$28.8
MGS – Heat	$6.6	$4.6
LGS	-	-
Public and Security Lighting	$1.3	$1.6
Public Authorities	$0.2	$0.2

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