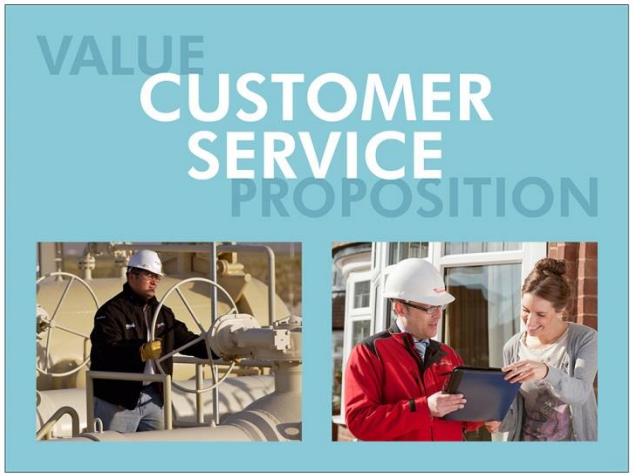
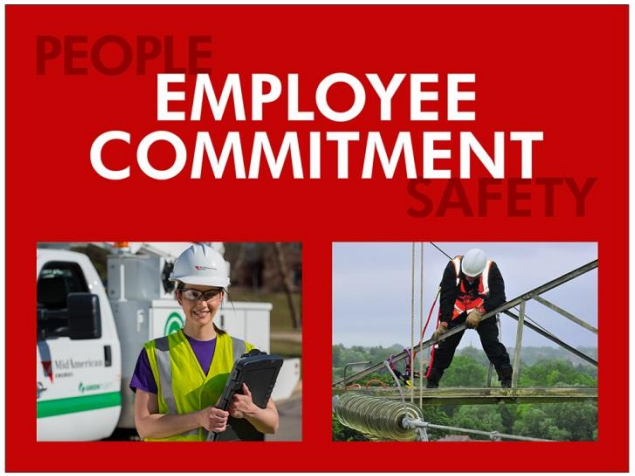
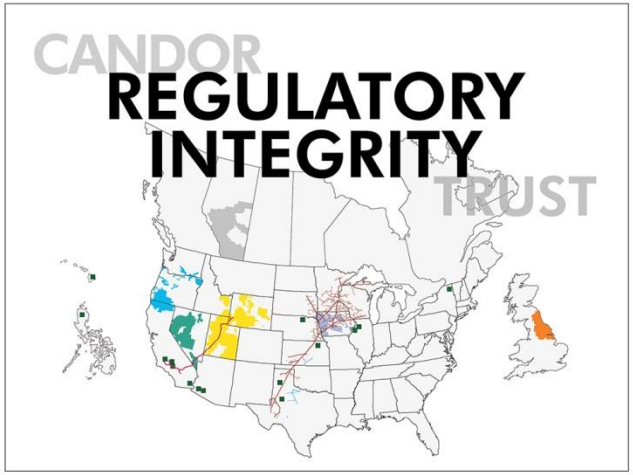






Residential Price Structure
For
Distributed Generation Customers

MidAmerican ENERGY
OBSESSIVELY, RELENTLESSLY *AT YOUR SERVICE*®

The Issue
Price Structure Must Reflect the Cost to Serve

- Previously, cost of service at the individual level was relatively unimportant
- Because distributed generation allows individual customers to dramatically alter their load shape, cost of service at the individual level becomes relevant
- Using Board-approved cost of service principles, it is possible to determine cost of service at the individual or group level and compare that to revenues based on current or proposed price structure
- Three-part price structure better reflects the cost to serve distributed generation customers

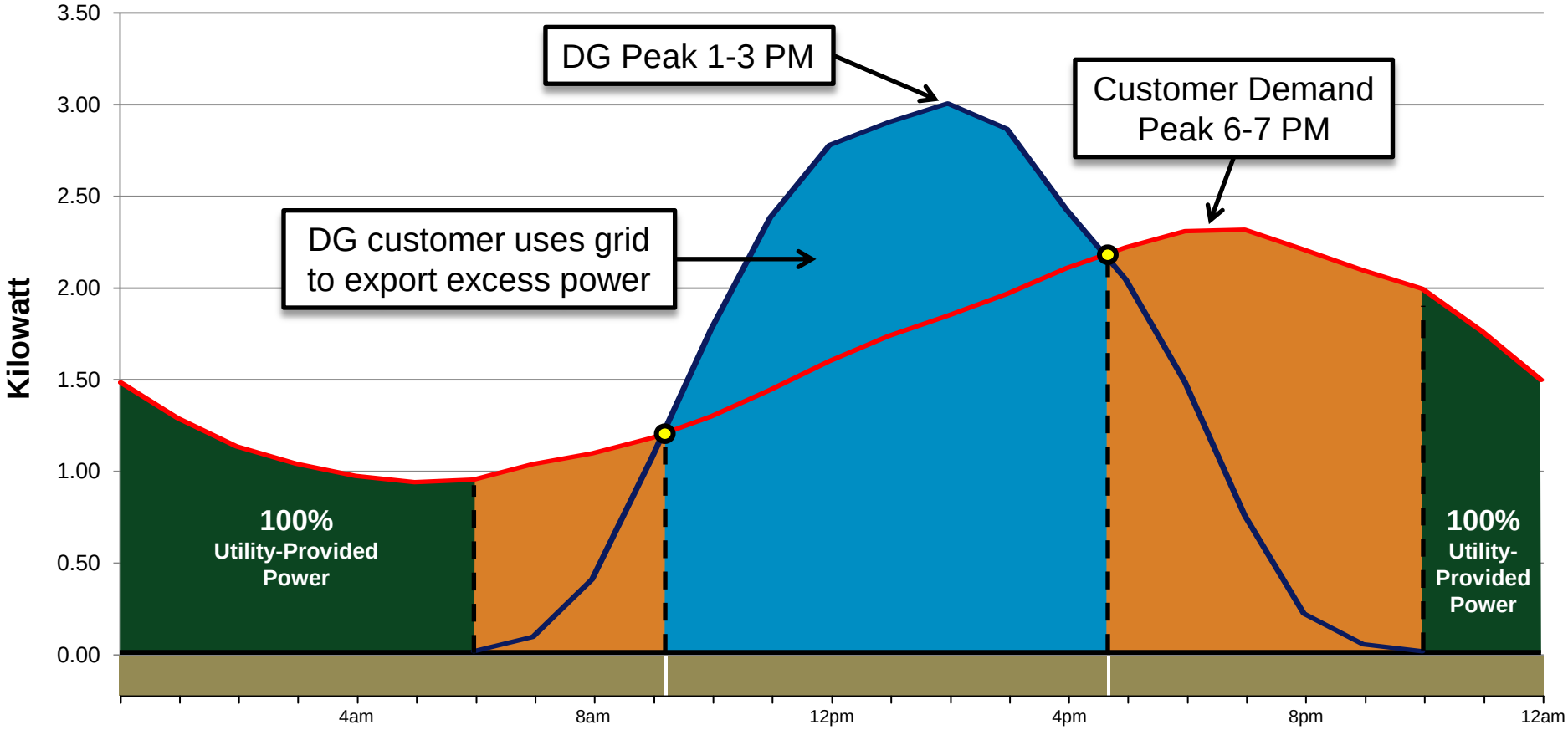
Distributed Generation Customers in Iowa

	Net Metered Customers	Total Electric Customers	Portion of Total Customers
2015	Total	Total	Total
June	211	662,221	.032%
July	223	662,872	.034%
August	229	663,357	.035%
September	237	663,822	.036%
October	254	664,908	.038%
November	259	665,939	.039%
December	274	666,803	.041%

- Distributed generation customers are currently a small percentage of total customers
- Distributed generation growth is happening but not at a significant pace

Now is the time to address price structure issues

Iowa Typical Residential Summer Demand with 5 kW_{DC} Solar DG System



Customer Demand

DG Generation

Utility-Provided Power
8 hours/day utility provides 100% of power needed

Utility and DG System-Provided Power
8.5 hours/day both utility and DG system provides power

DG System-Provided Power
7.5 hours/day DG system provides 100% of power needed

Utility-Provided Grid Services
23.99 hours/day utility provides all grid services

4

Price Structure
Comparison of Revenue to Cost

- Two-Part Price Structure
  - For normal use customers
    - Strong relationship between cost of service and revenues at the individual customer level
  - For distributed generation customers
    - Weaker relationship between cost of service and revenues at the individual customer level
    - Significant subsidies across the entire customer spectrum
- Three-Part Price Structure
  - Stronger relationship between cost of service and revenues at the individual customer level for both normal use customers and distributed generation customers
  - Subsidies are virtually eliminated across the board for both groups

Price Signal
Three-Part Price Structure

- Efficient pricing should match each service provided by the utility to the price for providing that service
  - Customer related services should be recovered through a fixed monthly charge
    - Accounting, billing, customer service systems
    - Terminals, transformers, wires closest to customer's premise
  - Grid related services (transmission and distribution functions which are demand related per cost of service) should be recovered through demand charges
  - Energy services (generation service) should be recovered through volumetric charges

Conclusion

There are good reasons to implement a well-designed three-part price structure

- More sophisticated price structure for more sophisticated load shapes (better alignment of prices and costs)
- Reduce inter-class cross-subsidies
- Regulatory precedent (commercial and industrial experience)
- Customer bills do not necessarily increase
- The time to implement is now

VALUE

CUSTOMER SERVICE

PROPOSITION

PEOPLE

EMPLOYEE COMMITMENT

SAFETY

REDUCING

ENVIRONMENTAL RESPECT

IMPACT

CANDOR

REGULATORY INTEGRITY

TRUST

EFFECTIVE

OPERATIONAL EXCELLENCE

EFFICIENT

BERKSHIRE FINANCIAL STRENGTH

OWNERSHIP

BERKSHIRE HATHAWAY ENERGY

Appendix

Framework for Evaluating Price Structure with Distributed Generation

- Framework is based on traditional utility cost of service principles pushed down to the individual customer level
- For a sample of customers
  - Identify cost of service using traditional accepted cost of service principles down to the individual customer level
  - Determine individual customer revenue based on current or proposed price structure
  - Analyze variances

MidAmerican
Residential Cost of Service

- Cost of service principles and methodologies were approved in Iowa Electric Rate Case RPU-2013-0004
- Generation: Hourly Costing Model
  - Residential = $293,532,806
- Transmission: 12 CP
  - Residential = $35,878,046
- Distribution: Class NCP
  - Residential = $139,765,629
- Customer Costs: Weighted Customers
  - Residential = $62,332,804 (includes customer growth pro forma adjustment)

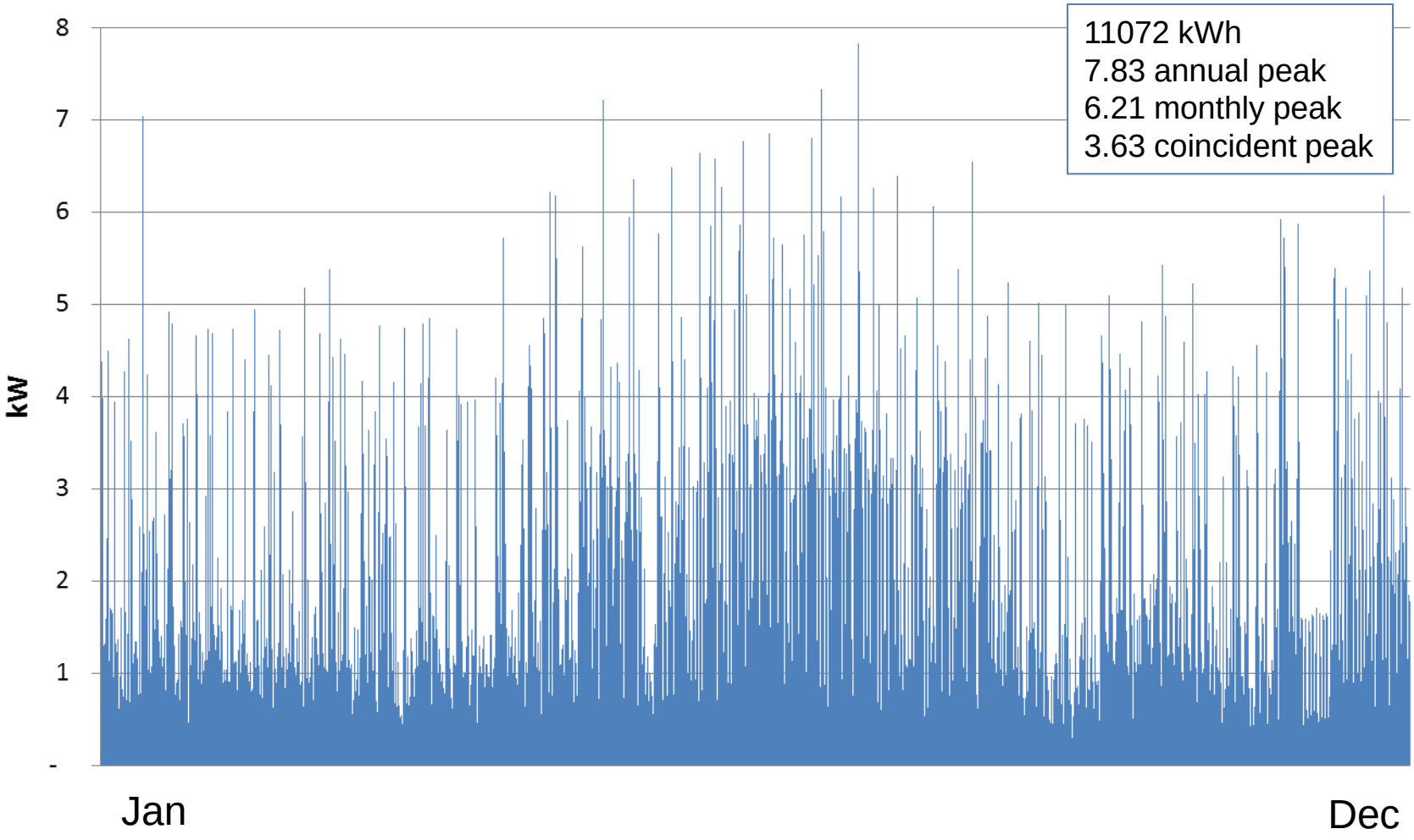
Pushing Cost of Service to the Individual Customer Level

- Individual customer load data from load research samples (or smart metering, if available) can be applied to cost of service principles to determine cost of service at an individual level
- For MidAmerican:
  - Generation and transmission are based on loads at discreet points in time, which makes application at an individual level easily identifiable
  - Distribution must be applied to individual peak demands
    - Peak demands are easily measured
    - What cost should be applied?
  - Customer charges can be stated on a per customer basis
- In theory, sum of cost of service at the individual customer level for all customers in a class will equal cost of service for the class

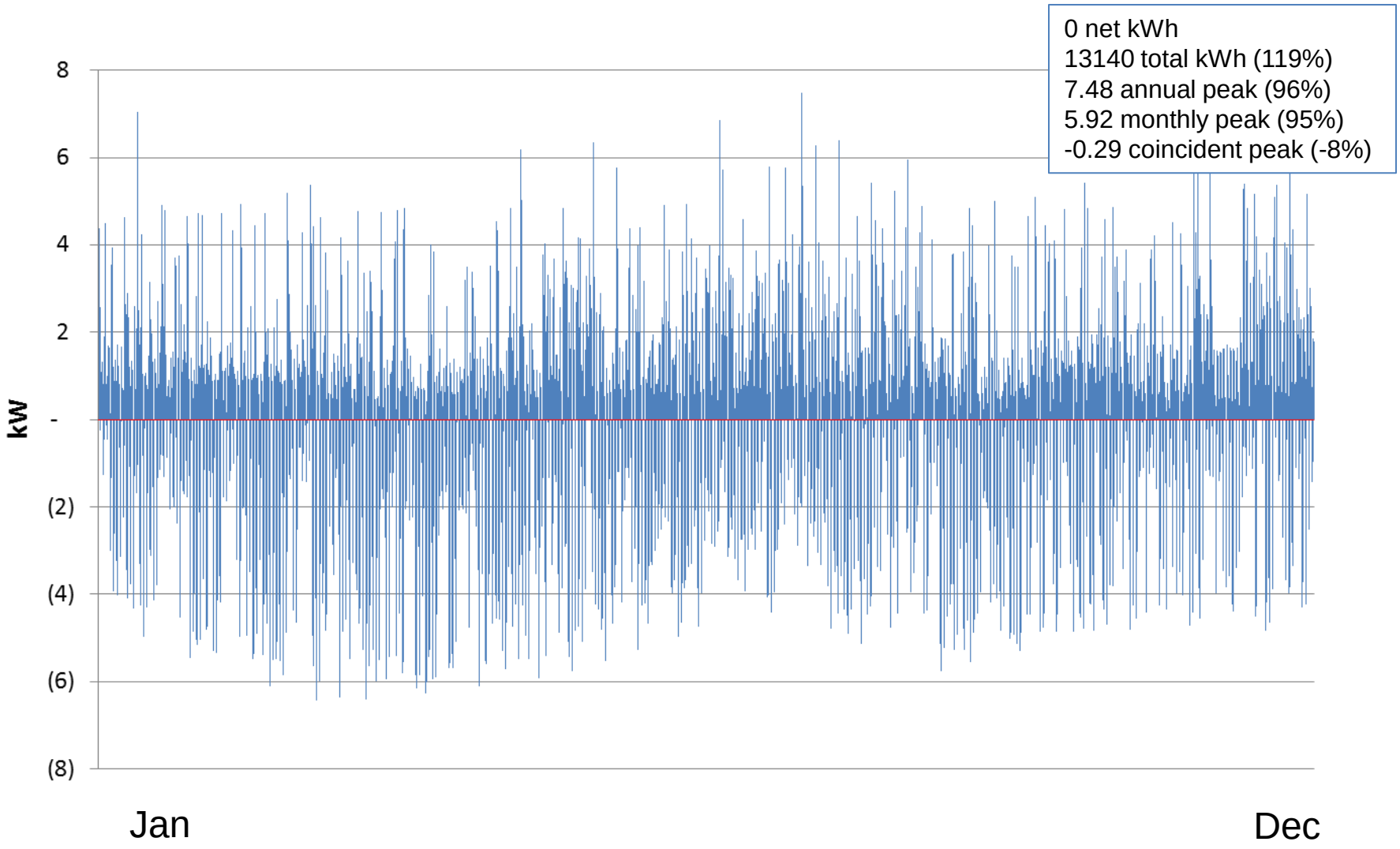
Individual Cost of Service Components

- The information listed below is everything that is needed to determine cost of service for an individual residential customer based on MidAmerican's approved cost of service methodology.
- Generation:
  - Hourly loads multiplied by Hourly Costing Model prices
- Transmission:
  - Total Cost = $35,878,046
  - Total residential class load at the time of monthly system peak = 13,361,000 kW
  - $35,878,406 divided by 13,361,000 = **$2.69/kw** applied to each individual customer's load at the time of monthly system peak
- Distribution:
  - Total Cost = $139,765,629
  - Average residential customer annual load factor is 16.31%
  - Based on total sales, estimated class maximum diversified demand = 3,956,150 kW
  - $139,765,629 divided by 3,956,150 = **$35.33/kW** applied to each individual customer's annual peak demand
- Customer Costs:
  - Total Cost = $62,332,804 (includes customer growth pro forma adjustment)
  - Total Customers = 553,442
  - Average cost per customer is **$112.63 per year**

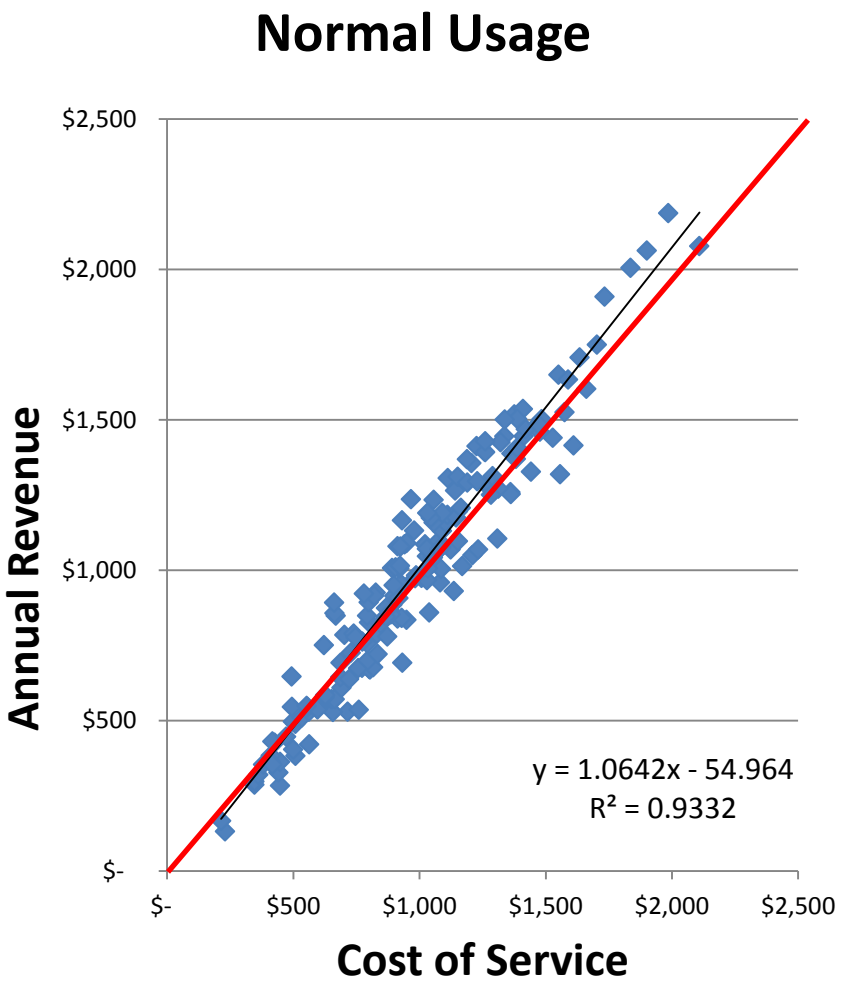
Typical Residential Annual Hourly Loads

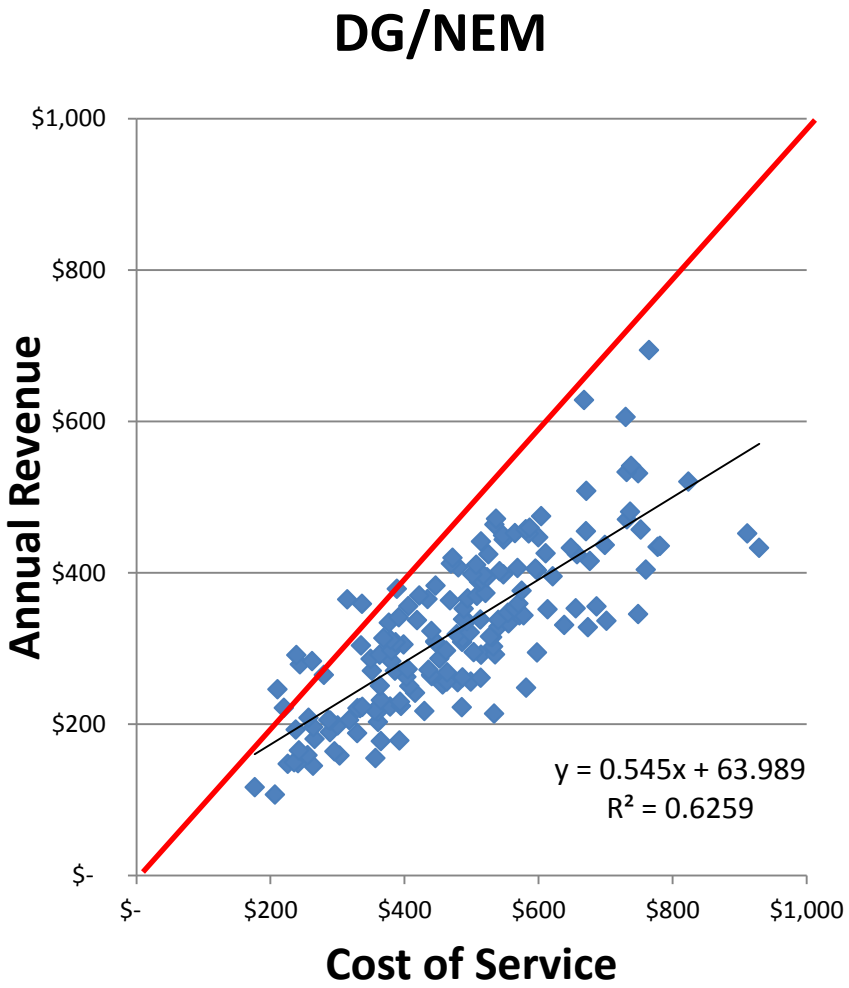


Typical Residential Annual Hourly Loads
100% Solar Net Metered



Standard Residential Two-Part Price Structure
Comparison of Revenue to Cost





Residential Three-Part Price Structure
Comparison of Revenue to Cost