NASUCA Mid-Year Meeting

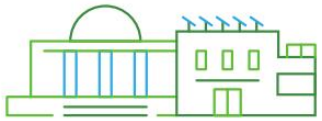
Methodologies for Calculating an Appropriate Customer Charge

Ron Nelson

June 25, 2018

STRATEGEN CONSULTING

Strategen provides insight to global corporations, utilities and public sector leaders, helping them to develop impactful and sustainable strategies for a transforming grid



CLIENTS

We work with governments, utilities, research institutions, technology providers, project developers, and large energy users seeking to evaluate and implement next generation grid and clean energy technologies.

MARKETS

Our exclusive focus on clean energy and advanced grid technologies means we bring our clients a sophisticated understanding of industry trends, market drivers and regulatory policy.

SERVICES

Our clients come to us for our expertise in developing business models, commercial strategies, financing tools and regulatory support that empower them to create sustainable value and long-term solutions.

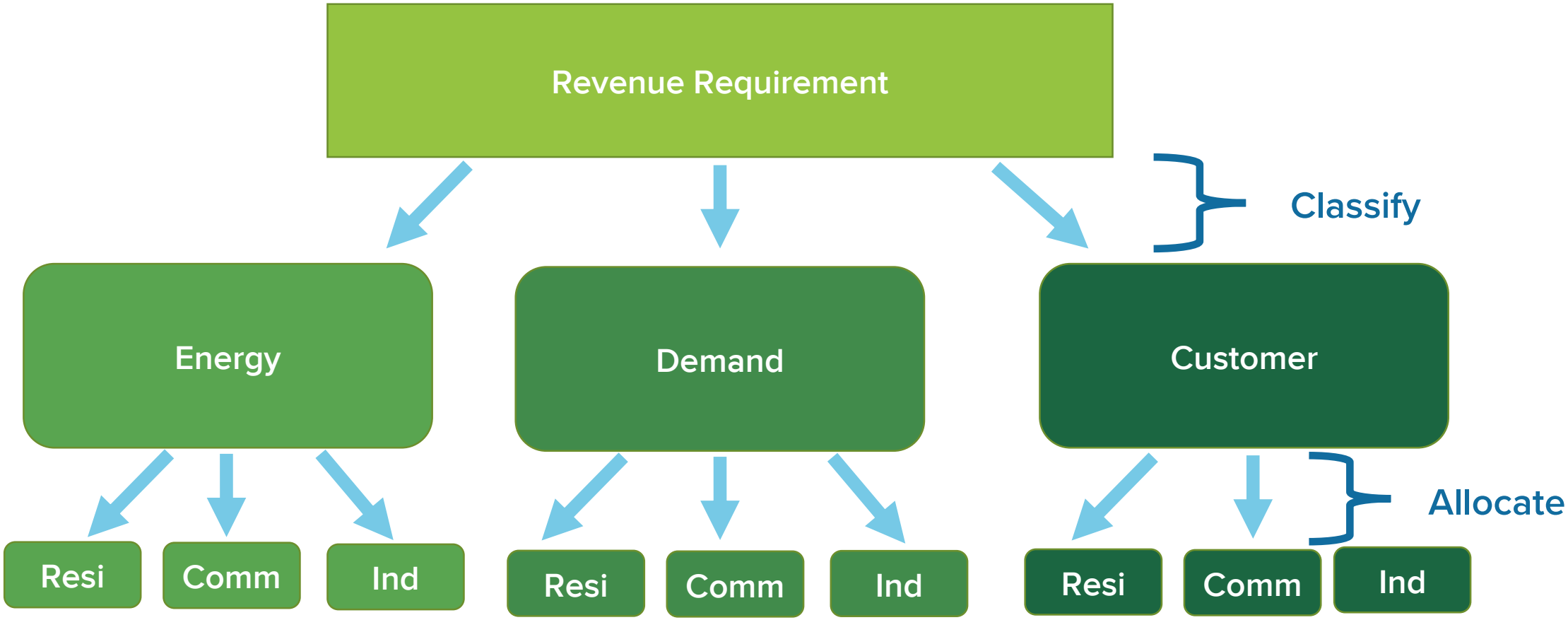
TEAM

Our team is comprised of well-respected thought leaders and industry experts who have played instrumental roles in shaping the power sector's transformation in the 21st century.

Overview

- How the Cost of Service (COS) study has traditionally informed customer charge levels
- Rethinking customer cost classification and allocation
  - Example: The largest inter-class subsidy in the cost of service study
- Strategen approach to calculating an appropriate customer charge

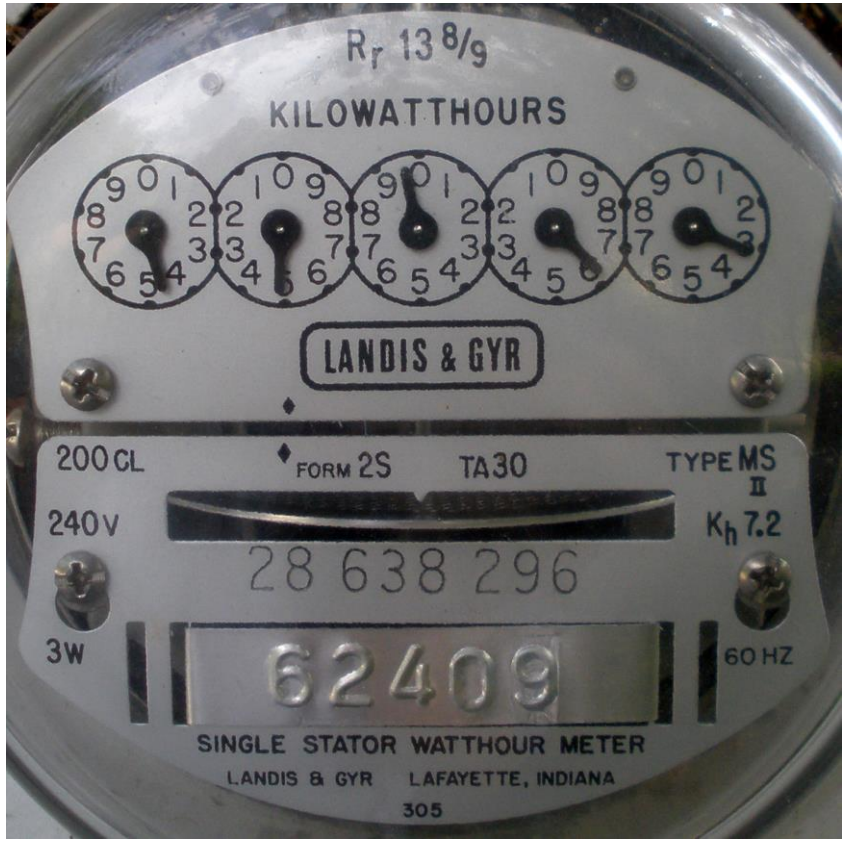
Dividing costs in the cost of service study



The concept of cost causation is used to divide costs into buckets

Technological disruption

- Traditional analog meter

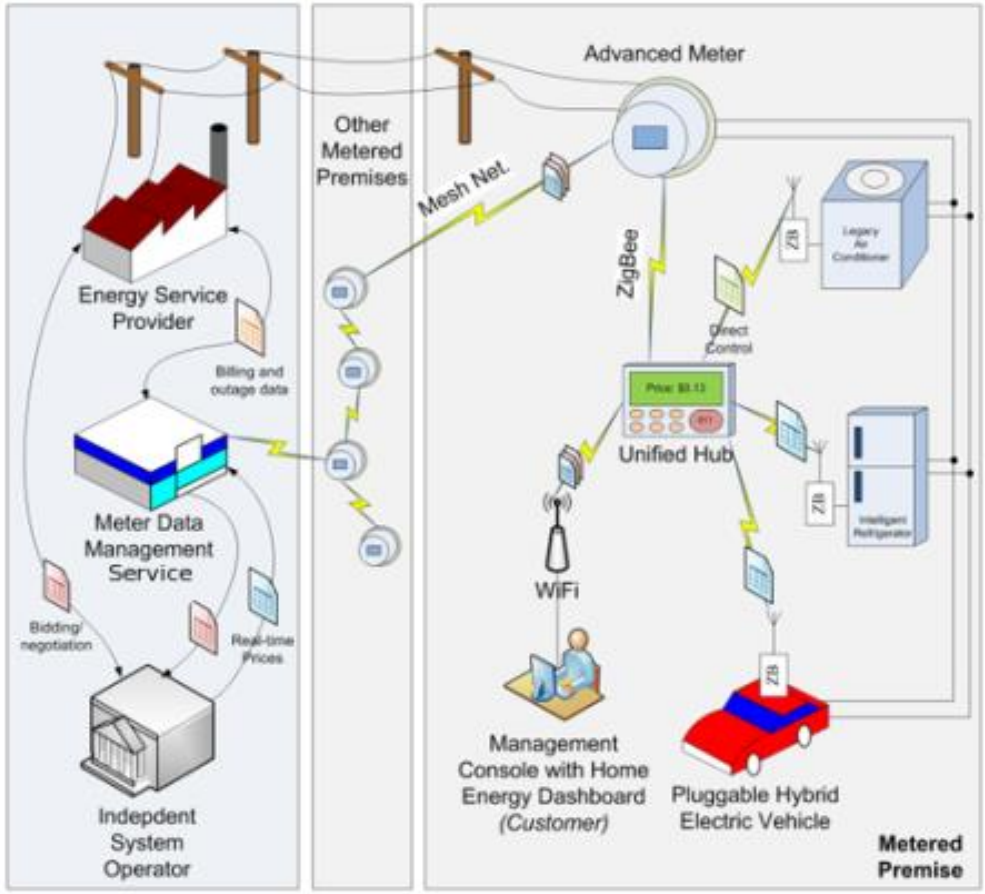


Analog meters were for reading kWh

Image source: myfloridahomeenergy.com

Cross-subsidy: Classification of AMI

- Advanced metering infrastructure (AMI) enables:
  - Time-varying rate design
  - Advance load management
  - Customer engagement
- Investments are made in AMI to:
  - Avoid generation and transmission additions
  - Lower line losses through volt/VAR optimization
  - Integrate intermittent generating resources
- AMI costs are NOT solely related to the number of customers



Cost causation and utilization of meters has changed

Image source: Illinois Security Lab

Example: Strategen customer-specific cost estimate

	Account	Minimum Amount	Maximum Amount	Calculation
Expenses				
Meters*	586, 597, 598	$ 798,423	$ 798,423	a
	Depreciation	$ 902,522	$ 902,522	b
Services	587		$ -	c
	Depreciation		$ 436,630	d
Meter Reading	902	$ 942,807	$ 942,807	e
Billing	903	$ 3,783,213	$ 3,783,213	f
Total Expenses		**$ 6,426,966**	**$ 6,863,596**	**sum(a:f)=g**
Rate Base				
Meters*				
Plant In Service		$ 18,711,692	$ 18,711,692	h
Less Accumulated Depreciation		$(7,976,258.92)	$(7,976,258.92)	i
Net Plant		$ 10,735,433	$ 10,735,433	h+i=j
Depreciation Expense		$ 902,522	$ 902,522	b
Services				
Plant In Service			$ 15,310,683	k
Less Accumulated Depreciation			$ (9,758,987)	l
Net Plant			$ 5,551,696	k+l=m
Depreciation Expense			$ 436,630	d
Meters		$ 10,735,433	$ 10,735,433	j
Services			$ 5,551,696	m
Total Rate Base		**$ 10,735,433**	**$ 16,287,129**	**sum(j,m)=n**
Grossed Up Return	**9.55%**	**$ 1,025,387**	**$ 1,555,653**	**Return*n=o**
Total Customer-Related Revenue Requirement		**$ 7,452,353**	**$ 8,419,249**	g+o=p
Annual Residential Bills		**1,253,737**	**1,253,737**	q
$/Month		**$ 5.94**	**$ 6.72**	p/q=r
*** Customer Related Portion**				

Source: Minnesota PUC Docket No. 16-664. Direct Testimony of Ron Nelson.

Expenses associated with metering, service lines and customer services

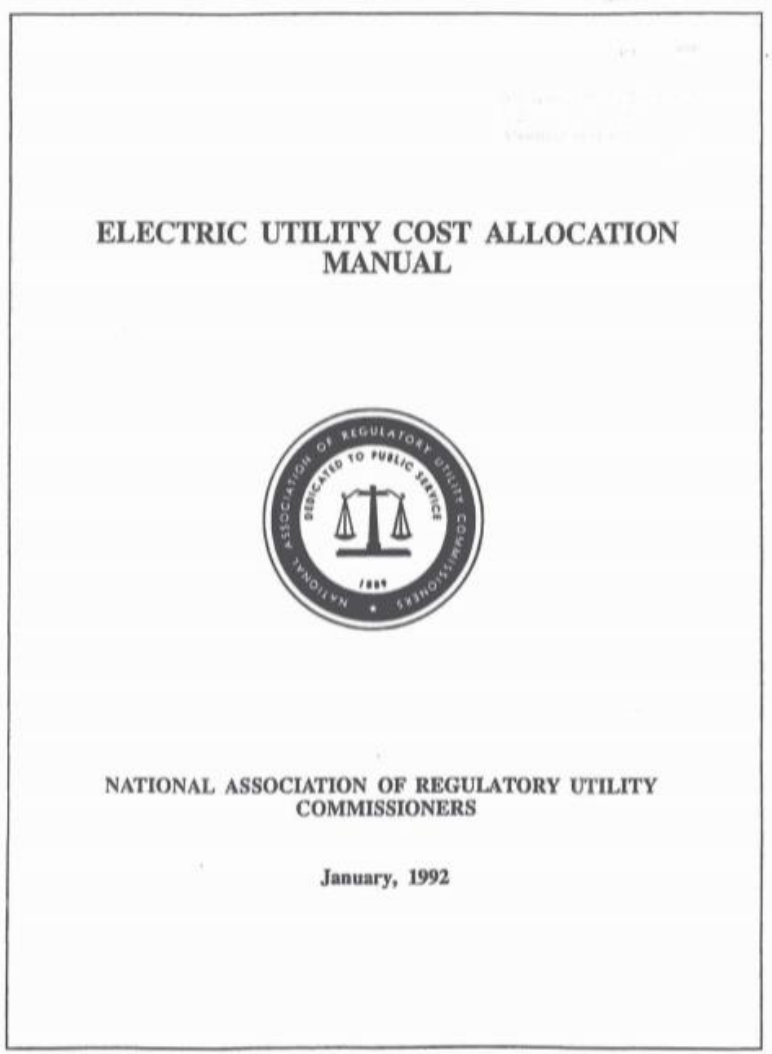
Return on rate base associated with metering, service lines and customer services

Total per customer costs associated with metering, service lines and customer services

Thank You

Ron Nelson
Senior Consultant
Strategen Consulting
Email: rnelson@strategen.com
Web: www.strategen.com

Cost of service studies – where the magic happens



ELECTRIC UTILITY COST ALLOCATION MANUAL

NATIONAL ASSOCIATION OF REGULATORY UTILITY COMMISSIONERS

January, 1992