

Performance Incentive Mechanisms 101

NATIONAL ASSOCIATION OF REGULATORY UTILITY COMMISSIONERS

CENTER FOR PARTNERSHIPS AND INNOVATION

PERFORMANCE-BASED REGULATION STATE WORKING GROUP

MARCH 12, 2021

About the PBRSWG and NARUC

- ▶ The Performance-Based Regulation State Working Group is facilitated by the National Association of Regulatory Utility Commissioners' Center for Partnerships and innovation (NARUC CPI).
- ▶ NARUC CPI thanks the US department of Energy for their ongoing support.

Hon. Dan Scripps
Chair of the Michigan Public Service
Commission
Vice Chair of the NARUC CPI PBRSWG

Mike O'Boyle

Energy Innovation

PERFORMANCE INCENTIVE MECHANISMS

NARUC PBR WORKING GROUP
MARCH 12, 2021



michael@energyinnovation.org

WHY PERFORMANCE INCENTIVES?

Necessary but not sufficient to address existing and emerging issues with utility business model:

- **Utility CapEx and throughput bias.**
- **Failure to prioritize societal benefits in investment decisions.**
- **Preference for centralized versus distributed (customer-centric) resources.**
- **Disincentives to take risks and innovate.**

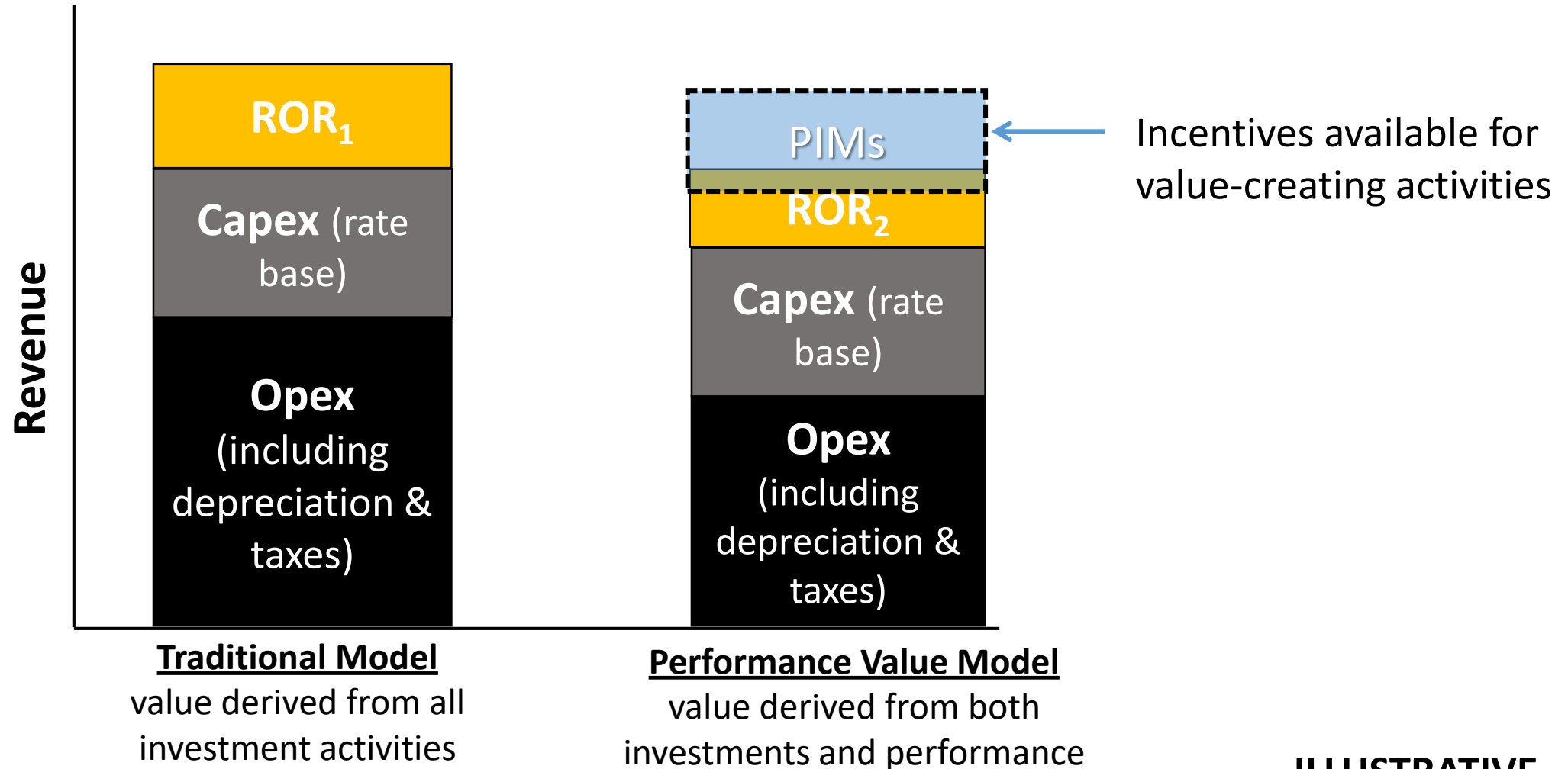
WHAT IS A PERFORMANCE INCENTIVE MECHANISM (PIM)?

- Regulators offer a financial upside or downside to utilities for performance against targeted outcomes via cash payments or incentive rates of return.
- Sits alongside or on top of existing revenue model, e.g.:

$$RR = (\text{Capex-D}) * ROR + \text{Opex} + D + T +$$

ROE Adder ↑
PIMs ————— Cash incentive ↑

Moving from **cost**-based to **value**-based ratemaking



PIMs are not new: Examples of common performance incentive mechanisms

Performance Area	Performance Incentive
Cost Containment	<ul style="list-style-type: none">• PPA Adders and Remuneration• Fuel cost risk sharing mechanisms• Non-wires alternatives
Sustainability	<ul style="list-style-type: none">• RPS alternative compliance payments• Efficiency performance incentives
Reliability	<ul style="list-style-type: none">• Reliability standards and penalties


Key questions for discussion

- What are the outcomes and metrics we care about?
- Do we want different PIMs in different market structures? (e.g. vertically integrated vs. restructured utilities)
- Why are PIMs needed when prudency review and planning are safeguards?
- How big should PIMs be? How do we balance utility and societal benefits?
- How do we build in adaptation & gradualism to PIM development?

Resources:

- RMI, [*PIMs for Progress*](#)
- Energy Innovation, [*Going Deep on Performance-Based Regulation*](#)
- RIPUC, Docket No. 4943, [*Guidance Document Regarding Principles to Guide the Development and Review of Performance Incentive Mechanisms*](#)
- Synapse Energy Economics, [*Utility Performance Incentive Mechanisms: A Handbook for Regulators*](#)

Grace Relf Hawaii PUC

A satellite photograph of the Hawaiian Islands, showing the main islands of Hawaii, Maui, Lanai, Molokai, Oahu, and Kauai. The islands are green and brown, surrounded by deep blue ocean water with white wave patterns. The perspective is from space, looking down at the islands.

Performance Incentive Mechanisms in Hawaii: From Soup to Nuts

Hawaii Public Utilities Commission
For the NARUC PBR Working Group
March 12, 2021

Hawaii's PBR Framework

Revenue Adjustment Mechanisms

- A 5-year **multi-year rate plan**
- Allowed revenues adjusted annually for **inflation** and a “**customer dividend**”
- An **Exceptional Project Recovery Mechanism** to for extraordinary projects

Performance Mechanisms

- **Five new PIMs**
- **Project/program-specific shared savings mechanisms** to incent cost-effective procurement of renewable energy generation and grid services
- Portfolio of **reported metrics** and **scorecards** to be developed by a Working Group

Pilot process

- A framework for **expedited review for pilot projects** to incent innovative programs and projects

Safeguards

- An **Earnings Sharing Mechanism** to protect the utility and customers from excessive earnings or losses
- A **Re-Opener** mechanism that allows the PUC to examine all or parts of the PBR framework

High-level Process Overview

Phase 1 Decision:

- Establish goals and outcomes

Working Group:

- Propose mechanisms

Formal briefing:

- Written proposals and information requests

Phase 2 Decision:

- Establish new PIMs

Working Group:

- Finalize details and tariffs



Stakeholder Engagement for Guiding Principles

Goal	Priority Outcome	
Enhance Customer Experience	Traditional	Affordability
		Reliability
	Emergent	Interconnection Experience
		Customer Engagement
Improve Utility Performance	Traditional	Cost Control
	Emergent	DER Asset Effectiveness
		Grid Investment Efficiency
Advance Societal Outcomes	Traditional	Capital Formation
		Customer Equity
	Emergent	GHG Reduction
		Electrification of Transportation
		Resilience



High-level Process Overview

Phase 1 Decision:

- Establish goals and outcomes

Working Group:

- Propose mechanisms

Formal briefing:

- Written proposals and information requests

Phase 2 Decision:

- Establish new PIMs

Working Group:

- Finalize details and tariffs



Working Group Activity

Metric Criteria	Y/N
Reflects desired outcome - data tied to outcome?	
Clearly defined – precise formula quantifying metric?	
Quantifiable through reasonably available data?	
Easily interpreted?	
Easily verified?	



High-level Process Overview

Phase 1 Decision:

- Establish goals and outcomes

Working Group:

- Propose mechanisms

Formal briefing:

- Written proposals and information requests

Phase 2 Decision:

- Establish new PIMs

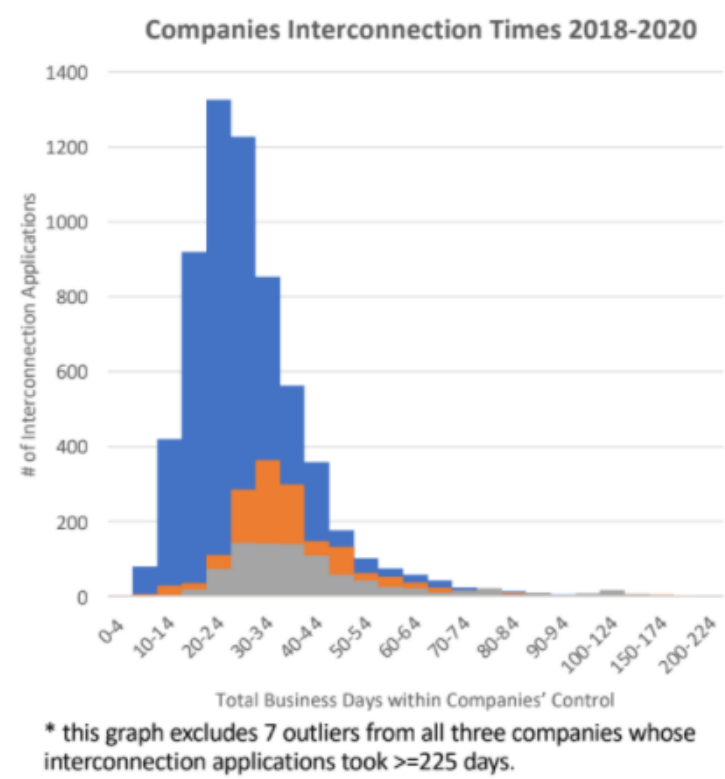
Working Group:

- Finalize details and tariffs



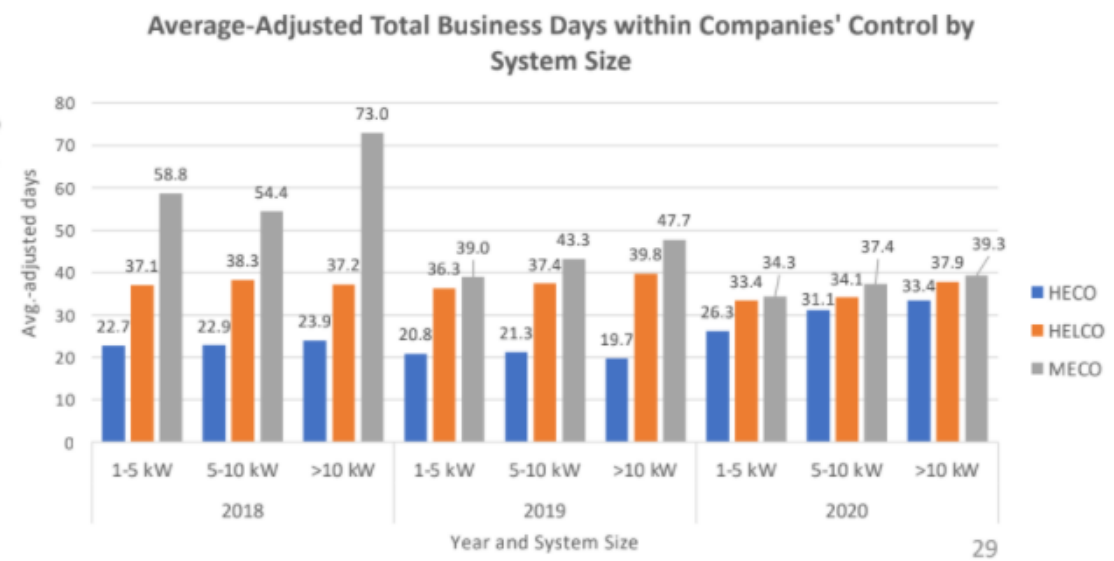
From Theory to Practice

Companies' 2018-2020 DER Interconnection Data



Hawaii Public Utilities Commission

Adj-Avg Total Business Days w/in Companies' Control	HECO	HELCO	MECO
2018	23.01	37.55	56.60
2019	20.95	37.28	43.62
2020	29.72	34.49	37.47
% Improvement			
2018 -> 2019	9%	1%	23%
2019 -> 2020	-42%	7%	14%



High-level Process Overview

Phase 1 Decision:

- Establish goals and outcomes

Working Group:

- Propose mechanisms

Formal briefing:

- Written proposals and information requests

Phase 2 Decision:

- Establish new PIMs

Working Group:

- Finalize details and tariffs



Performance Incentive Mechanisms

PIM	Objective	Potential Reward	Penalty
RPS-A	Accelerate achievement of Renewable Portfolio Standards (RPS) goals	<ul style="list-style-type: none"> • \$20/MWh 2021-2022 • \$15/MWh 2023 • \$10/MWh remainder of term 	<ul style="list-style-type: none"> • \$20/MWh for every MWh under the RPS
Grid Services	Expedite acquisition of grid services capabilities from DERs	<ul style="list-style-type: none"> • \$1.5 million 	<ul style="list-style-type: none"> • No penalty
Interconnection Approval	Improve customers' experience by incenting faster interconnection times for DER systems <100 kW	<ul style="list-style-type: none"> • \$3 million 	<ul style="list-style-type: none"> • Maximum penalty is \$900,000
LMI Energy Efficiency	Encourage customer engagement, equity, and affordability by delivering energy savings for low-and moderate-income (LMI) customers	<ul style="list-style-type: none"> • \$2 million 	<ul style="list-style-type: none"> • No penalty
AMI Utilization	Promote customer engagement and DER asset effectiveness by accelerating the number of customers with advanced meters enabled to support time-varying rates and next generation DER programs	<ul style="list-style-type: none"> • \$2 million 	<ul style="list-style-type: none"> • No penalty



High-level Process Overview

Phase 1 Decision:

- Establish goals and outcomes

Working Group:

- Propose mechanisms

Formal briefing:

- Written proposals and information requests

Phase 2 Decision:

- Establish new PIMs

Working Group:

- Finalize details and tariffs



Summary

- Identify your desired outcome
 - What are we trying to incent?
- Propose mechanisms
 - Are rewards or penalties appropriate?
- Test your ideas
 - Does this incent the identified outcome directly?
 - Do the data support the design?
 - Is the incentive level appropriate relative to costs and benefits?
 - Can we anticipate unexpected outcomes and minimize potential for gaming?
- Tie up all loose ends
- Evaluate and adjust going forward



Mahalo!

<https://puc.hawaii.gov/energy/pbr>

Grace.e.relf@hawaii.gov



Assistant AG Ian Dobson Minnesota

Minnesota PIMs Statutory Authority

- Multi-year Rate Plans - Minnesota Statutes, section 216B.16, subd. 19
- 2015 amendment – Allowed Commission to require PIMs

Minnesota PIMs Xcel Rate Case

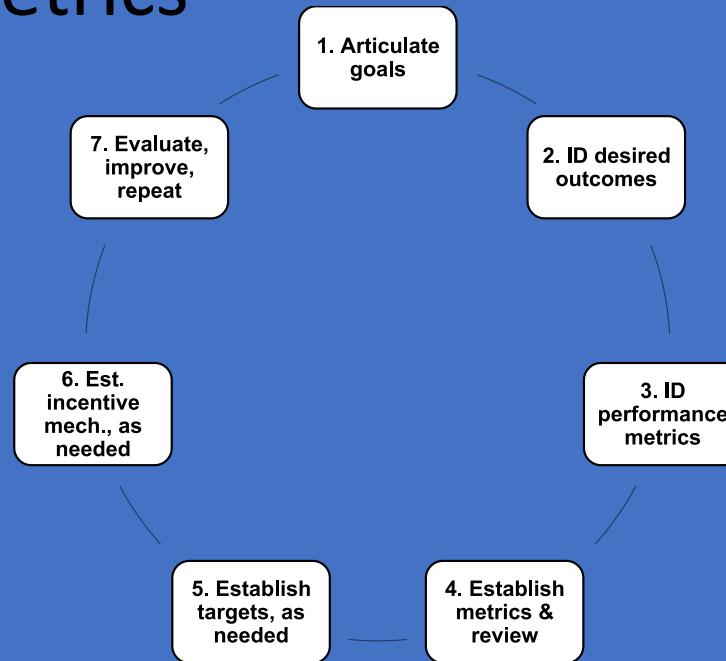
- 2015 – Xcel files a 3-Year Rate plan
- Xcel Proposes new performance metrics:
 - Customer Satisfaction
 - Customer Choice
 - Environmental Stewardship
 - Customer Outage Experience
- Settled in 2017 – docket opened to develop PIMs/Standards for PIMs

**Consumer
Advocate Role**
Get Aligned with the
Commission!

- Keep Commission focus on its core role: affordability and reliability
- Maintain focus on ends and not means for PIMs
- Steady voice in the torrent of proposals

Consumer Advocate Role How to do this

- Advocate for Commission direction
 - Commission sets the goals and outcomes before establishing metrics



How this worked in Minnesota

PUC Goals

- Environmental Protection
- **Adequate, Efficient, and Reasonable Service**
- **Reasonable Rates**
- Opportunity for utilities to earn a reasonable return

PUC Outcomes

- **Affordability**
- **Reliability**, including both customer and system-wide
- **Customer Service Quality**, including satisfaction, engagement, and empowerment
- Environmental Performance
- **Cost-effective** alignment of generation and load

Pete Cappers

LBNL

Performance Incentive Mechanisms 101

Recent Experience with PIMs

NARUC Performance Based Regulation Working Group

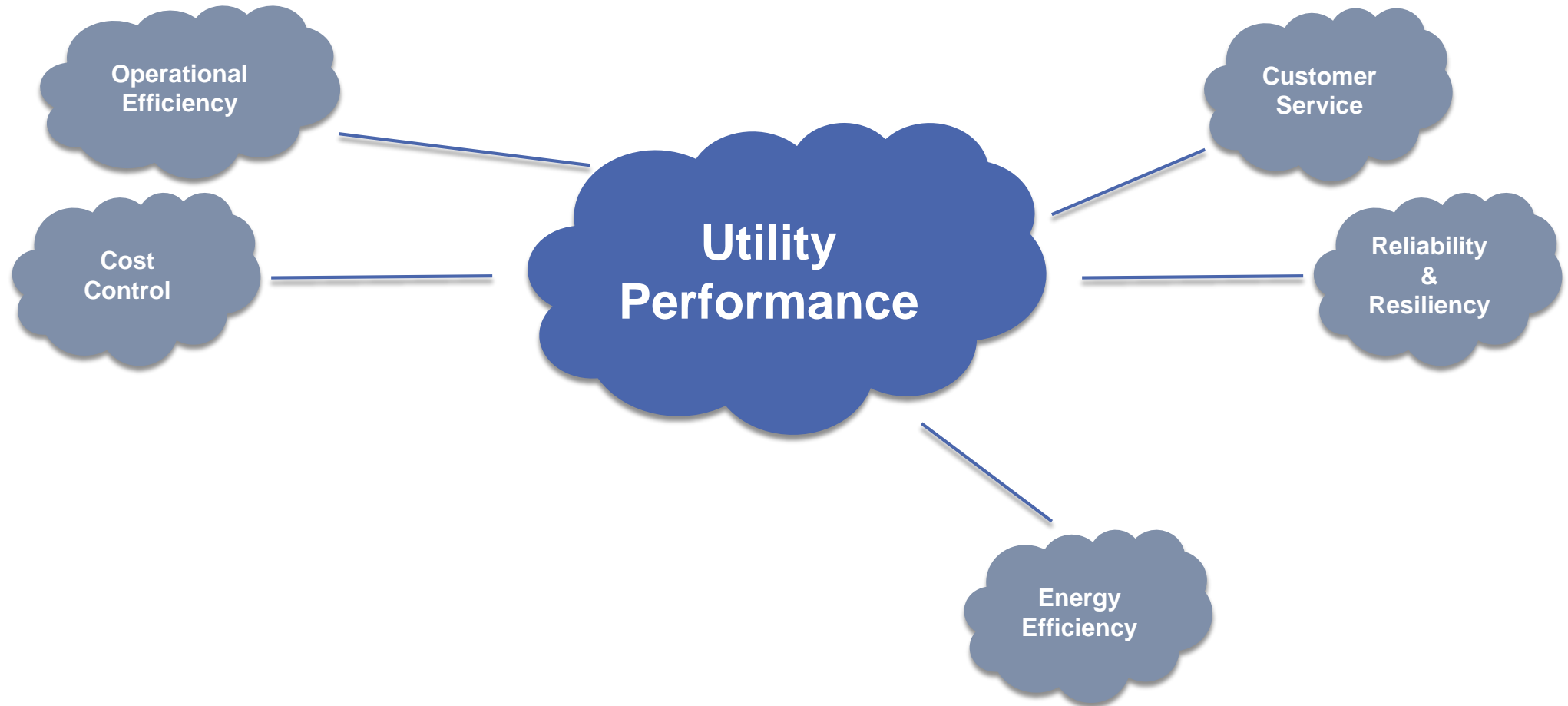
03/12/2021

Peter Cappers

This work was funded by the U.S. Department of Energy under Contract No. DE-AC02-05CH11231.

Driving Utility Performance via PIMs

Historical Experience

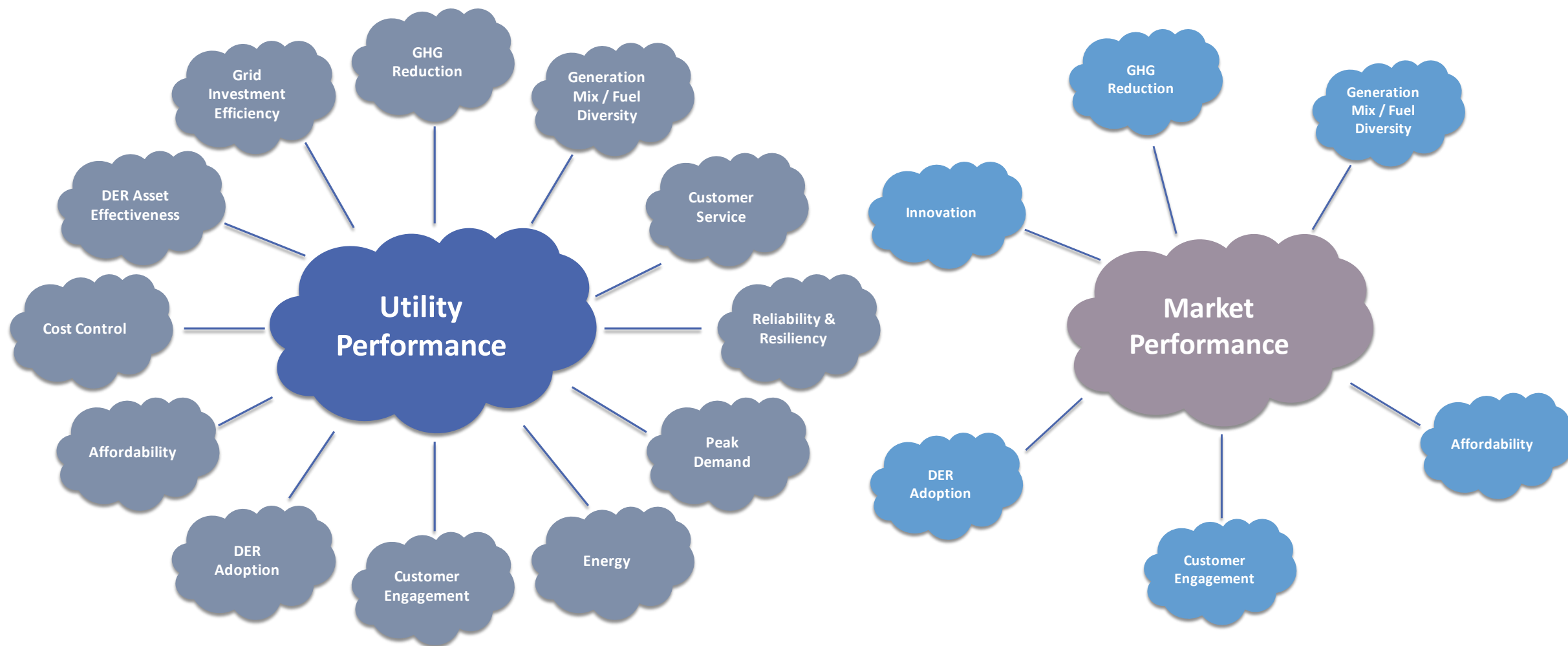


Driving Utility Performance via PIMs

Recent Experience



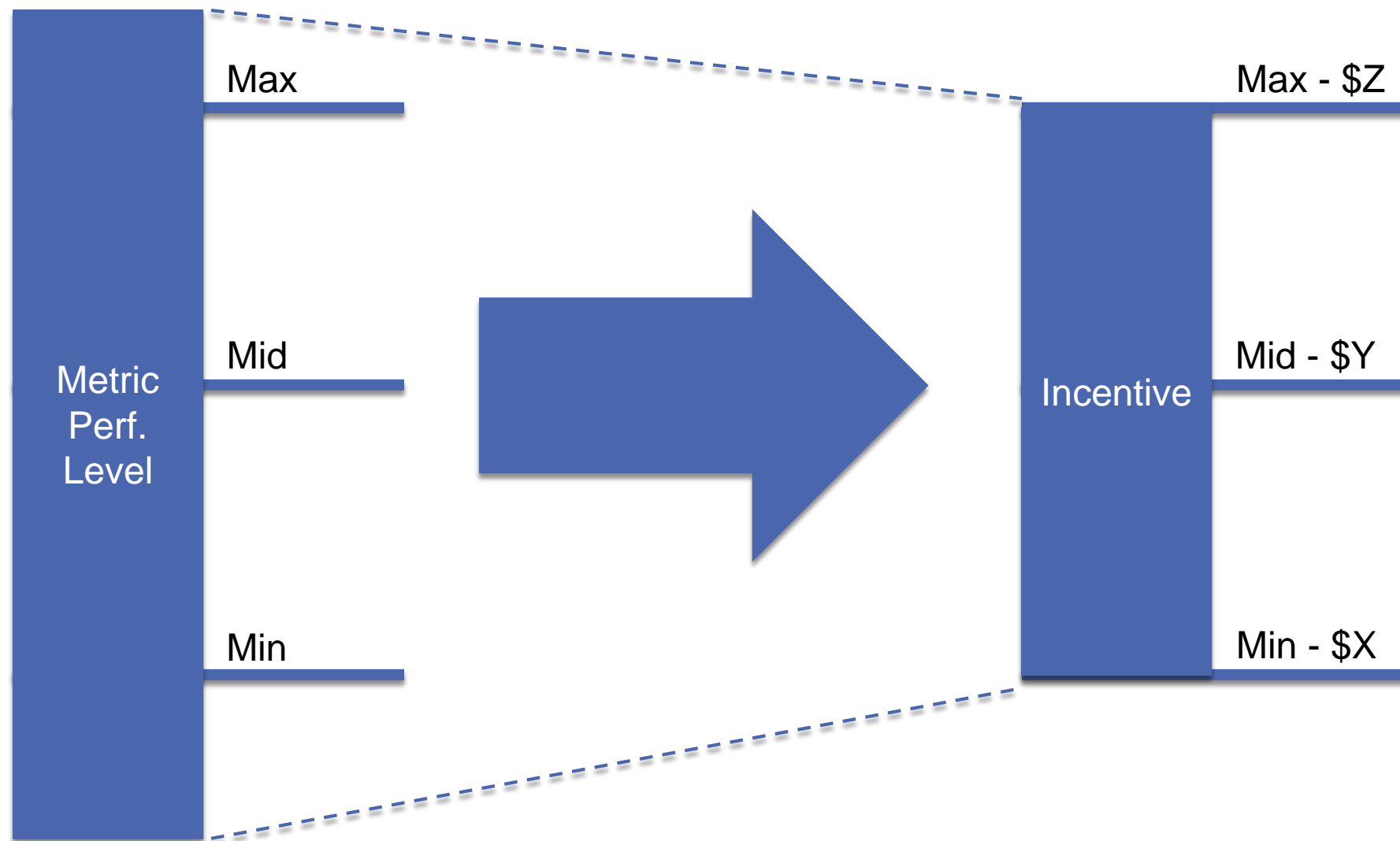
Driving Utility & Market Performance via PIMs



“If you build it, they will come”... right?



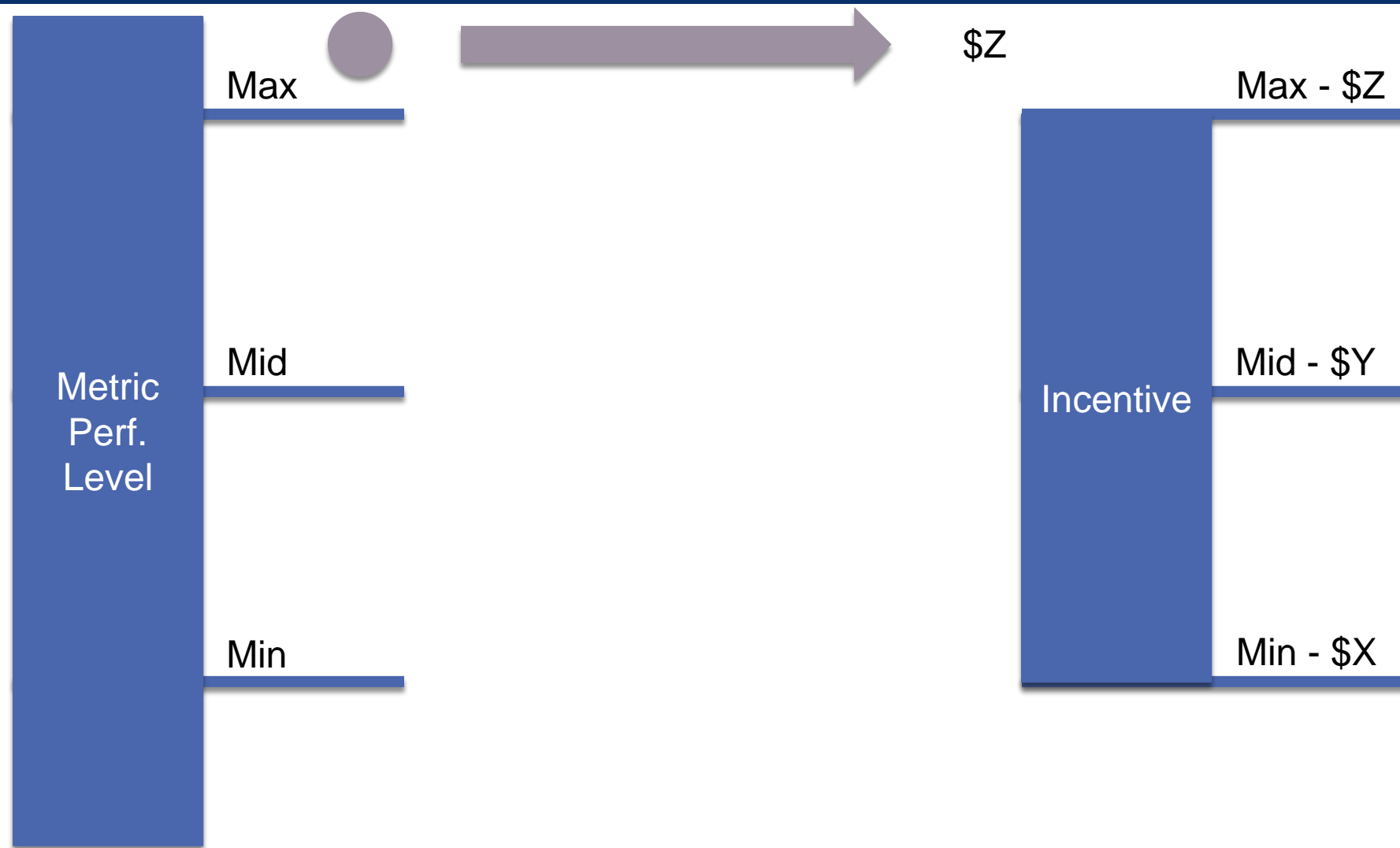
New York PIMS (Earnings Adjustment Mechanisms - EAM)



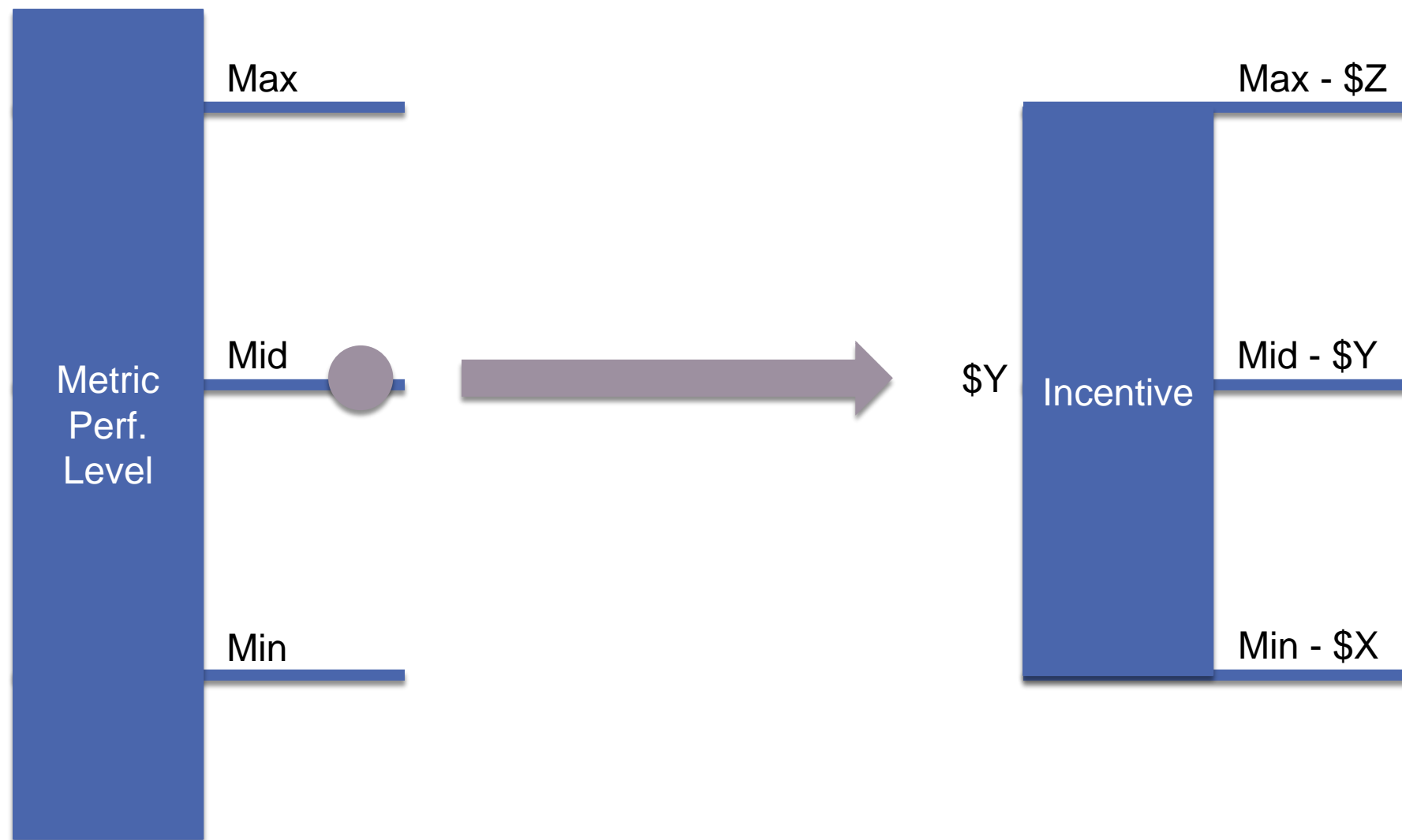
New York PIMS (Earnings Adjustment Mechanisms - EAM)



New York PIMS (Earnings Adjustment Mechanisms - EAM)



New York PIMS (Earnings Adjustment Mechanisms - EAM)



Recent Experience with PIMS: NY REV

	CHGE			NGrid		
	2018	2019	2020	2018	2019	2020
CP	0%	0%	0%	100%	100%	45%
DER	0%	100%	100%	4%	0%	0%
EE	100%	100%	100%	39%	100%	100%
EI-Res	0%	0%	0%	69%	0%	0%
EI-Com	0%	0%	100%	100%	33%	100%
BE	100%	100%	100%	47%	100%	100%
CE	0%	0%	0%	N/A	N/A	N/A
SL	N/A	N/A	N/A	0%	65%	22%
Total \$M	\$0.7	\$1.6	\$2.1	\$11.3	\$12.1	\$12.2
% of Total	1.4%	3.0%	3.9%	6.4%	6.8%	6.9%

LEGEND

CP - Coincident Peak Reduction

DER – DER Utilization

EE – EE Savings

EI – Energy Intensity

BE – Beneficial Electrification

CE – Customer Engagement

SL – Street Lighting Conversion

N/A – Not Applicable



Next Time – Metrics for Resilience-Focused PIMs

- Define some key concepts, terms, and metrics to help differentiate resilience from reliability
- Discuss recent developments regarding resilience metrics and the technologies they may apply to
- Identify some tools to help in benchmarking and determining an electrical grids level of resilience
- Present a case study example of a framework and set of metrics for a particular type of resilience



Q&A Discussion