



Establishing Metrics

NARUC PBR State Working Group

Ryan Katofsky, Advanced Energy Economy
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Agenda

- Why establish metrics
- Metrics in the broader context of PBR
- Some metrics design considerations



Why establish metric for utilities?

- Old EE adage: “If you can’t measure it, you can’t manage it”
- Metrics are not new, e.g., SAIDI, SAIFI, BUT...
- Metrics can help address information asymmetry inherent in utility regulation
 - Especially as options for meeting goals become more varied & complex
 - Especially as regulators tackle emerging opportunities that do not fit neatly into existing ratemaking frameworks

We need new ways to define and measure utility performance, and ultimately, to incentivize desired outcomes



Expectations of what the grid must deliver are changing

Core Expectations

- Universal access
- Equitable cost allocation
- Safety
- Reliability
- Affordability

Emerging Expectations

- Equity & environmental justice
- Decarbonization / electrification
- Resilience
- Greater customer control
- High DER penetration / integration

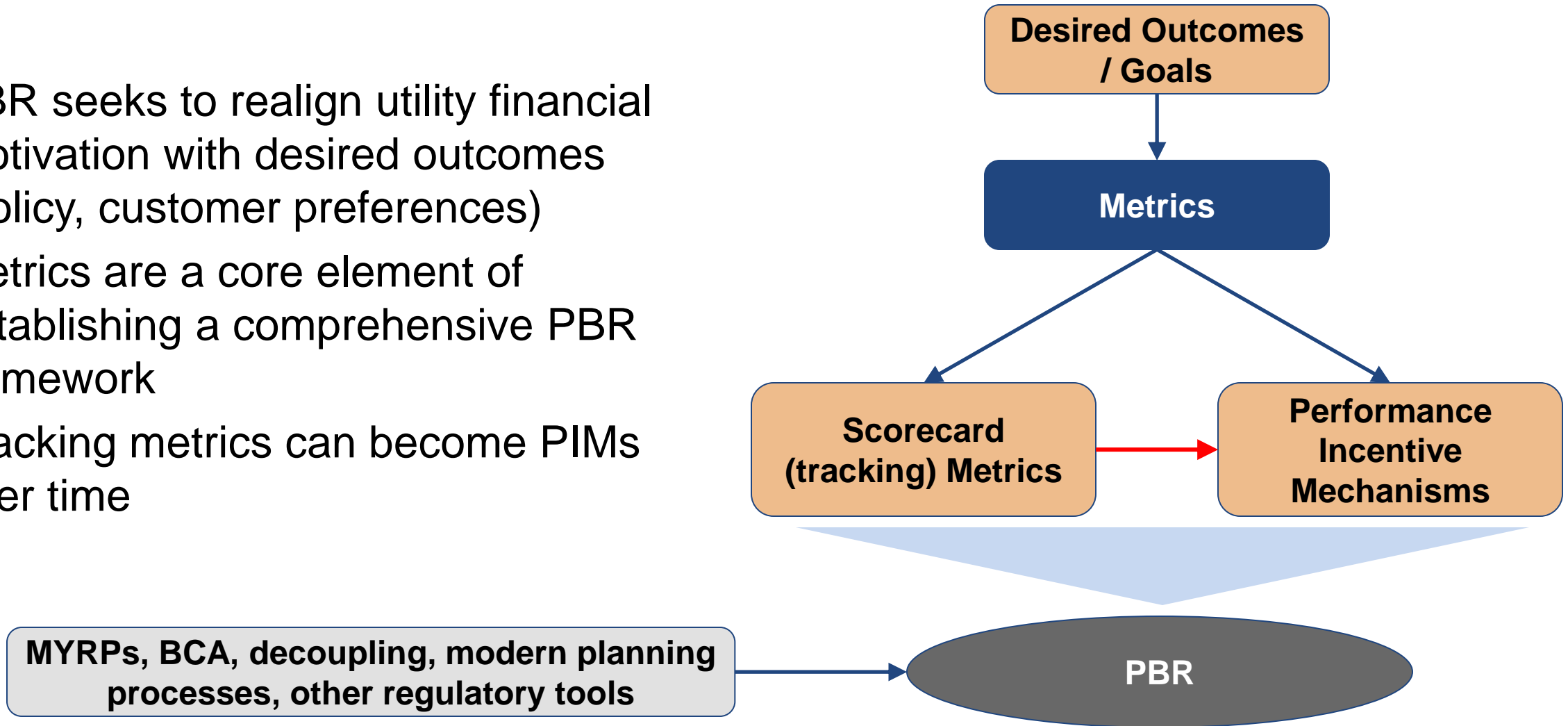
Additional Pressures

- Aging infrastructure (rising costs)
- Flat/declining load growth (falling revenues)
- Variable renewable energy integration
- Cyber and data security



Metrics in the broader context of PBR

- PBR seeks to realign utility financial motivation with desired outcomes (policy, customer preferences)
- Metrics are a core element of establishing a comprehensive PBR framework
- Tracking metrics can become PIMs over time



Core principles for good metrics design

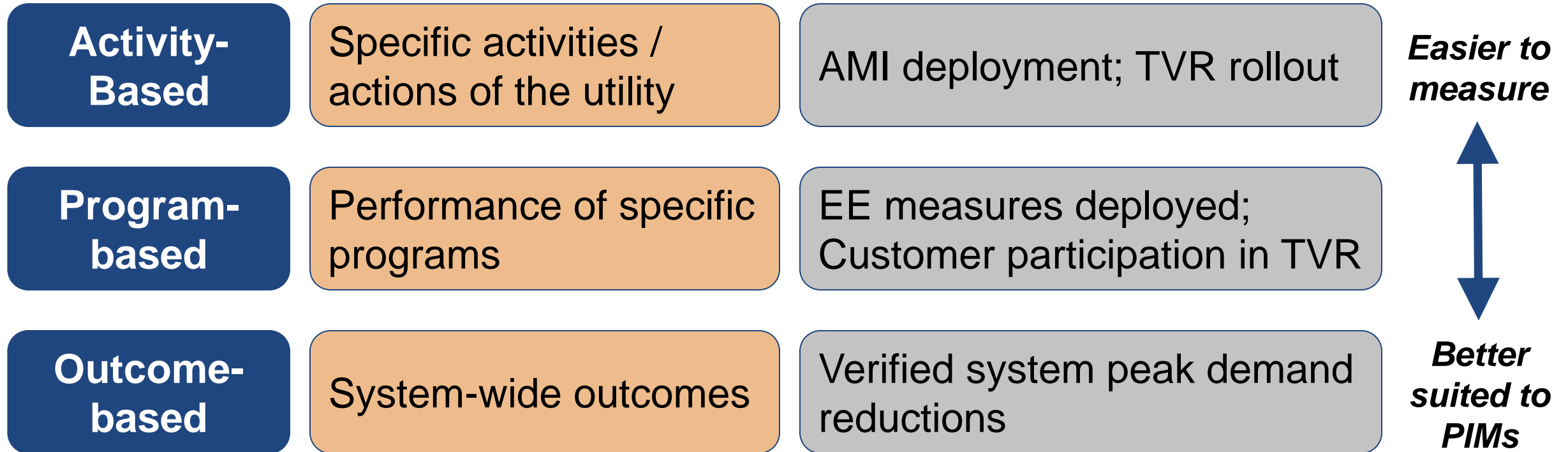
- Tied to a policy goal
- Clearly defined
- Quantifiable using reasonably available data
- Easily verified / validated
- Within reasonable control of the utility

Additional Considerations for PIMs

- Don't have too many
- Focus on outcomes that would otherwise undermine traditional utility earnings opportunities
- Should result in net benefits for customers



Types of metrics

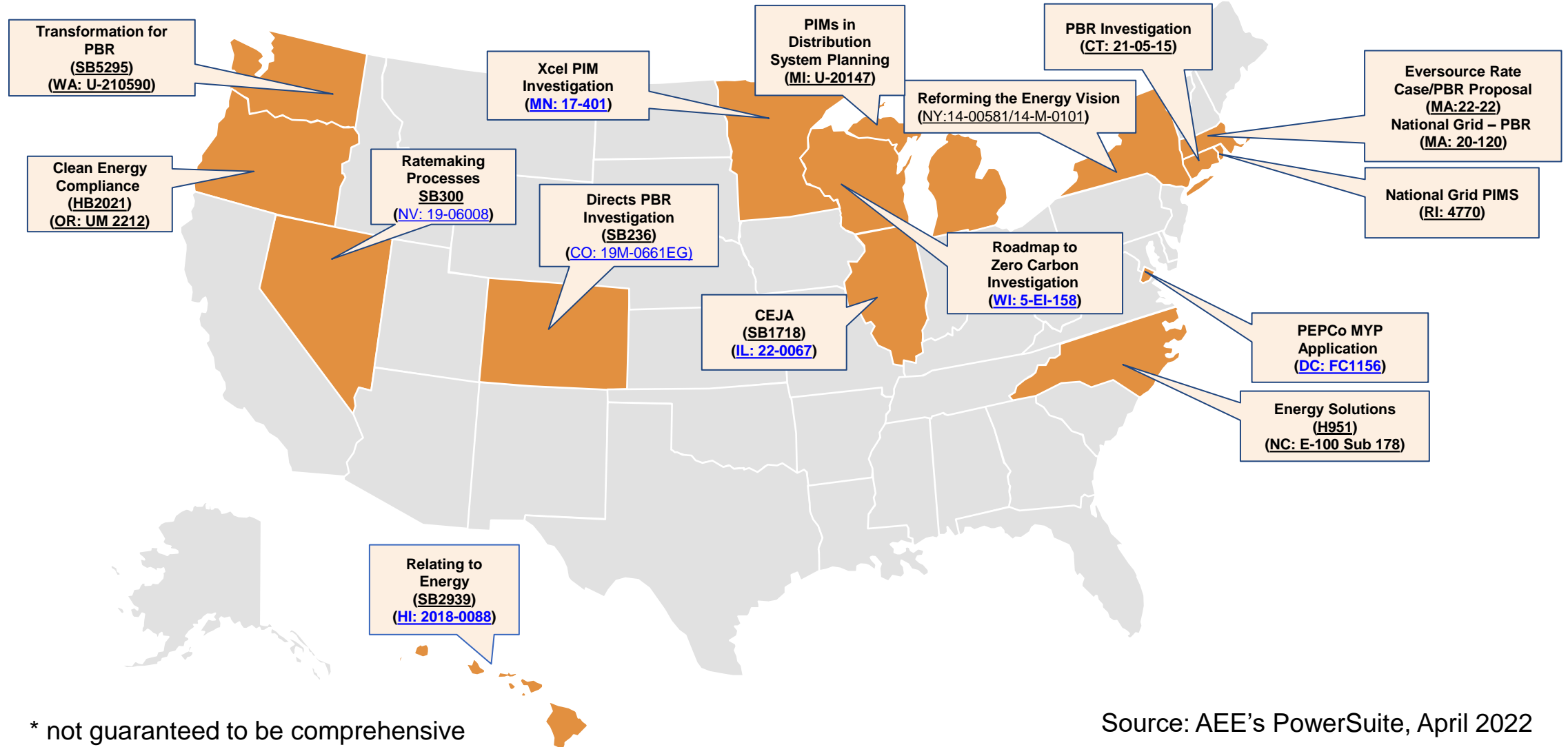


Some examples of emerging performance areas suitable to metrics

- **Reliability**
 - Traditional metrics PLUS new ones, e.g., improvements to worst performing circuits; reliability in historically underserved communities
- **Environmental performance / Equity**
 - EJ community impacts
 - GHG reductions
- **Peak load reduction**
 - System-wide
 - Local constraints / investment deferral
- **Ease of third-party access to customer data**
- **Beneficial electrification**
- **Customer empowerment / engagement**
 - DR program participation, adoption of TVR; DER deployment / integration



You are not alone! PBR-related activity across the U.S.*



* not guaranteed to be comprehensive

Source: AEE's PowerSuite, April 2022

Thank you!

Ryan Katofsky
rkatofsky@aee.net



Establishing Metrics

NARUC Performance-Based Regulation State
Working Group

April 14, 2022 | Rachel Gold, rgold@rmi.org

In partnership with the NW Energy Coalition



RMI's Mission: Transforming the global energy system to secure a clean, prosperous, zero-carbon future for all

Driving Decarbonization



Carbon-Free
Electricity



Carbon-Free
Mobility



Carbon-Free
Buildings



Carbon-Free
Industry

Strengthening Market Catalysts



Data &
Transparency



Climate
Finance



Technology



Education &
Capacity
Building

Working Across Critical Global Geographies



China



US



India



Africa, SE Asia,
Islands



Cities

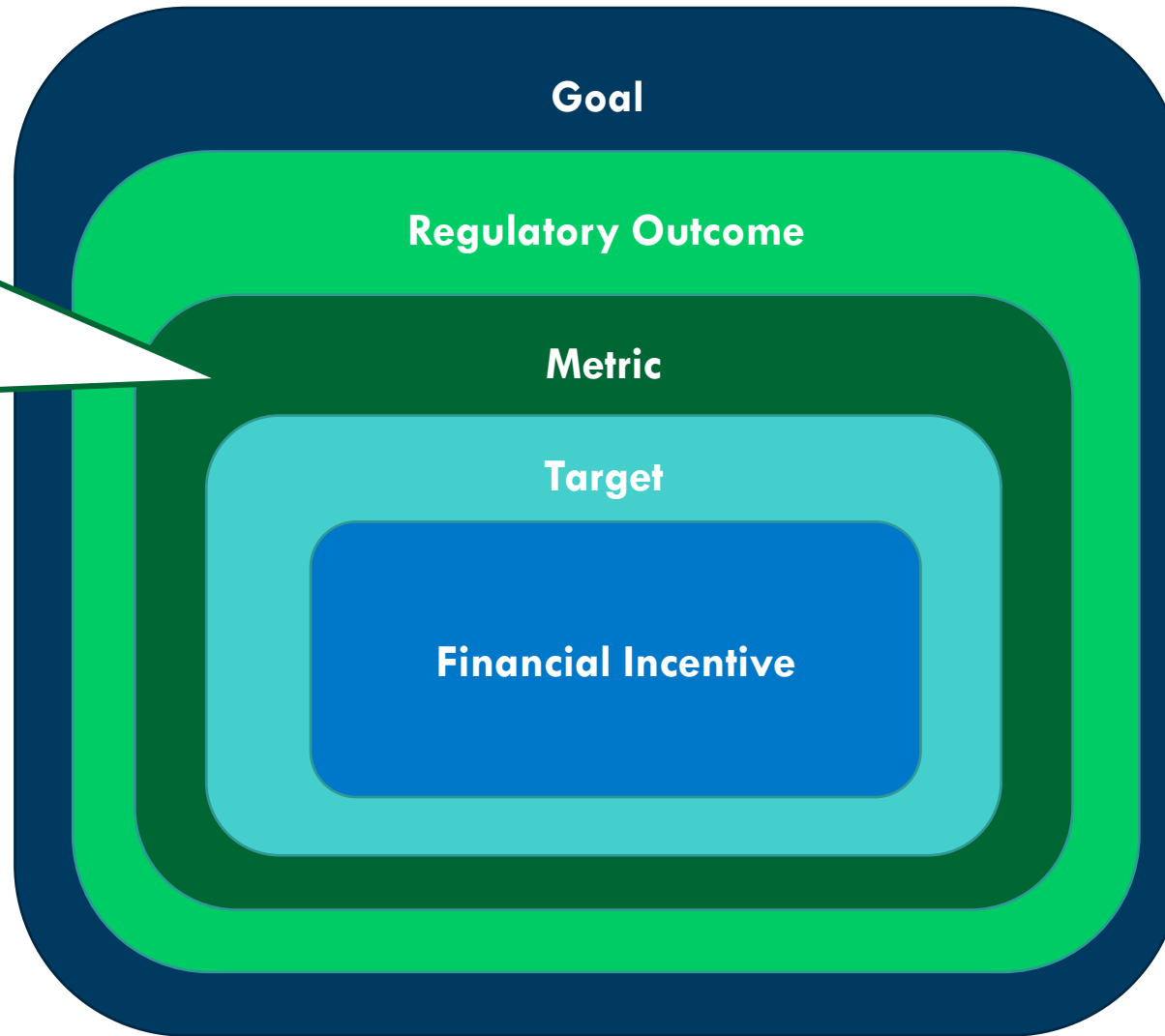
Agenda

- The role of metrics in performance-based regulation
- Key questions to set up a good metric
- Process considerations for metric design

The role of metrics in PIM design and the PBR process

METRICS:

- Measurable and quantifiable
- Utilize the most appropriate data points for outcome
- Consider what is in and out of utility control



Why might you track metrics without a financial reward or penalty?

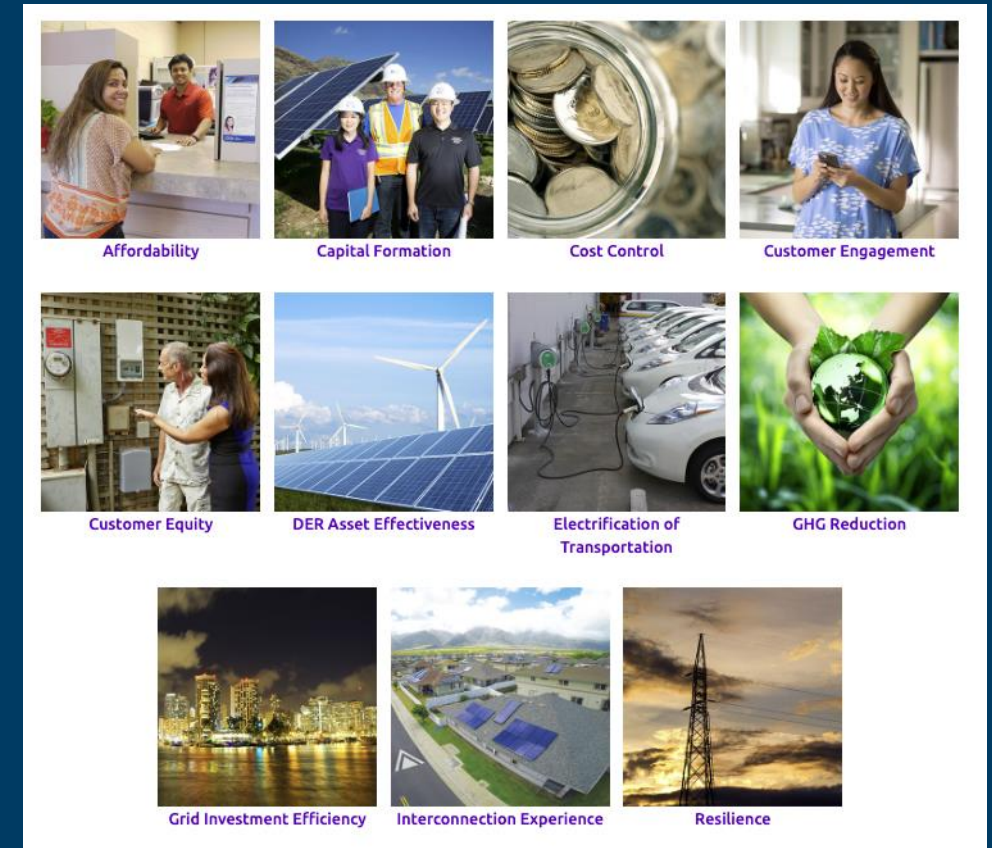
- **Track emergent outcomes where there is limited data and experience, to inform Scorecard or PIM design in future**
- **Measure utility performance and motivate improvement through enhanced transparency**
- **Complement a portfolio of other PBR mechanisms to produce a holistic view of utility performance**

Metrics Example: Hawaii

- 15 scorecard and 22 reported metrics across 11 outcomes (see image) established in June 2021 (D&O 37787)
- Example outcome: affordability

Affordability Reported Metrics	
LMI Energy Burden	Typical and average residential bills as a percentage of low-income average income, by island
Payment Arrangement	Percent of customers entered into payment arrangements by zip code
Disconnections	Percent of disconnections for non-payment by customer class by zip code

Hawaiian Electric PBR Scorecards and Metrics website



Application to your state



Key Questions for Metric Selection

1. What is the right metric(s) to use to measure progress toward the outcome area?
2. Should the metric be activity-, program-, or outcome-based, and how might this affect utility performance?
3. Is the metric measurable and quantifiable?
4. Does the metric measure something under the utility's control or is it influenced by external factors?
5. What level of administrative resources is required to track the metric?

Key Questions for Metric Selection

1. What is the right metric(s) to use to measure progress toward the outcome area?

There are a variety of approaches to measuring GHG reductions from energy efficiency programs:

- **Direct**

- Avoided GHG emissions from specific programs (e.g, NY utilities)

- **Less direct**

- kWh or therms savings (most utilities)
- Summer and/or winter peak demand savings (e.g., MA, VEIC)
- BTU savings, or other metrics for electrification deployment (e.g., MA)
- Completed deep retrofits (DC SEU)

Key Questions for Metric Selection

2. Should the target be activity-, program-, or outcome-based, and how might this affect utility performance?

Metric Type	Description	Examples for GHG Reduction
Activity-based	<ul style="list-style-type: none">Track specific utility actions or decisionsCould be helpful if direct measurement of an outcome is not possibleMay not support development of effective programs	<ul style="list-style-type: none">Number of deep energy retrofits (30% savings or greater) completed in large (50K+ sq ft) buildingsPercentage of households with EVs enrolled in demand response programs
Program-based	<ul style="list-style-type: none">Measure performance of specific utility programsCan be easier to measure than system-level metricsMay not result in most cost-effective utility actions to achieve outcomeAre more likely to interact and overlap with each other	<ul style="list-style-type: none">avoided metric tons of carbon dioxide equivalent (MTCO₂e) for specific programs (e.g. energy efficiency, storage, electrification)For EV DR programs, proportion of EV charging (MWh) that occurs in peak and off-peak hours
Outcome-based	<ul style="list-style-type: none">Focus on whether an outcome is achievedCost recovery for all utility actions may not be guaranteedMay be difficult to determine whether utility actions or external factors have led to desired outcomes	<ul style="list-style-type: none">avoided metric tons of carbon dioxide equivalent (MTCO₂e) across service territory

Key Questions for Metric Selection

3. Is the metric measurable and quantifiable?

Example: New York, ConEdison Earnings Adjustment Mechanism (EAM) for GHG reductions (2018)

- **Considered a broad metric based on the NYC GHG Inventory, which would measure actual reductions based on customer energy consumption, but not selected due to:**
 - complexities of developing a territory-wide emissions inventory
 - challenges in establishing targets that can meaningfully measure achievements isolated from other macro-effects impacting emissions
 - lack of available data source for Westchester county
- **Instead, went with a metric that measured annualized avoided metric tons CO₂e from a range of specific activities (e.g, light duty EVs, heat pumps, battery and ice storage, etc)**
 - Some measurements were individually metered, others used specific formulas

Key Questions for Metric Selection

4. Does the metric measure something under the utility's control or is it influenced by external factors?

Examples of tracking metrics for GHG associated with transportation electrification

- **Beyond utilities' control: Rhode Island**

- measures the incremental CO₂ avoided from electric vehicles registered each year above the utility's forecast

- **Within utilities' control: Minnesota**

- calculates avoided emissions from electric vehicles by multiplying kWh of metered charging by the annual system average carbon intensity and comparing to a gasoline vehicle

Key Questions for Metric Selection

5. What level of administrative resources is required to track the metric?

Example: Xcel Minnesota GHG Emissions Tracking

- Metric: total carbon emissions by (1) utility-owned facilities and PPAs and (2) all sources
- Xcel already self-reports to The Climate Registry for tracking carbon emissions from utility-owned facilities and PPAs (Pools 1-4) and from all sources (Pools 1-6); reporting leverages those same data

Example: Hawaii Electric Customer Engagement Scorecards

- Metric: Number and percent of customers that have used Green Button Connect My Data to enable sharing of information
- Launch of Green Button Connect was already planned, which enabled data on its usage to be leveraged to track customer engagement and encourage the utility to make data sharing with third parties and customers seamless

Process Steps for PUCs to consider in Metric Development

- Articulate clear principles for what makes an appropriate metric
- Create opportunities for stakeholders to share their ideas for metrics
- Use tools (e.g, worksheets, structured questions to staff proposals) to help parties work through their own prioritization and narrow options, based on the principles
- Engage stakeholders in the process of “downselecting” metrics through iteration
- Make decisions on metrics
 - New metric creation may be needed where stakeholders do not respond to priority outcomes
- Solicit stakeholder feedback on the reporting frequency and format of metric

Some process choices can frustrate stakeholder engagement in metric development:

- Use of a rate case for metric development
- Limiting proposals to utilities can force other parties and PUC to be reactive

Resources on metric development

State Examples (Concept Papers on Metrics):

- 2020, PUC of Nevada, [Minimum Requirements, Evaluation Criteria and Metrics for Alternative Ratemaking in Nevada](#)
- 2018, Hawaii PUC, [Prioritized Outcomes, Regulatory Options and Metric Development for Performance-Based Regulation in Hawaii](#)

RMI Resources:

- 2022, RMI, [Shining a Light on Utility Performance in Hawaii's Clean Energy Transition](#)
- 2020, RMI, [PIMs for Progress: Using Performance Incentive Mechanisms to Accelerate Progress on Energy Policy Goals](#)

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NARUC PBR State Working Group

Doug Scott

Great Plains Institute

April 14, 2022



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Minnesota and Illinois

Two Midwestern Case Studies

Illinois

- 2011 Energy Infrastructure Modernization Act
- 2022 Climate and Equitable Jobs Act

Minnesota

- MYRP legislation
 - E21 Process
 - PUC Process



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Minnesota

- Lengthy Process
- e21 Work
- Stakeholder Engagement, including for metric establishment
- Clear Goals, Outcomes, Targets, Measurement



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Office of Attorney General PIM Process

1. Articulate Goals
2. Identify desired outcomes
3. Identify Performance Metrics
4. Establish metrics and review
5. Establish targets, as needed
6. Establish incentive mechanisms, as needed
7. Evaluate, improve, repeat



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Minnesota Goals

- Environmental Protection
- Adequate, efficient and reasonable service
- Reasonable rates
- The opportunity for regulated entities to receive a fair return on their investments



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Desired Outcomes

- **Affordability**
- **Reliability, including both customer and system-wide perspectives**
- **Customer service Quality, including satisfaction, engagement and empowerment**
- **Environmental performance, including carbon reductions and beneficial electrification'**
- **Cost-effective alignment of generation and load, including demand response**



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Illinois: A Tale of Two Approaches

- 2011—EIMA
 - * Legislatively set metrics
 - * Little debate
 - * Reliability measures only
- 2021—CEJA
 - * Process for PBR
 - * Legislatively set areas for PIMs
 - * Metrics through ICC Process



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Illinois: Good Process, Time Constrained

CEJA—Major Rewrite of Ratemaking

- Multi-year Rate Plans
 - Grid Audit
- Formula Rate Phase-out
 - Storage
 - Interconnection
- Integrated Distribution Plans



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Illinois: CEJA Parameters

Goals:

- Protecting a healthy environment and climate
 - Improving public health
- Creating quality jobs and economic opportunities, including wealth building, especially in economically disadvantaged communities and communities of color

Objectives:

- Reliability
- Decarbonization
- Cost-effective utility investments that support achievement of clean energy policies



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Objectives, cont.

- **Cost-effective assets and services**
 - **Affordability**
- **Maintain and grow a diverse workforce and procurement policies**
 - **Improve customer service and engagement**
 - **Address particular burdens faced by consumers in environmental justice areas**
 - **Implement or otherwise enhance current supplier diversity programs**



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Lessons Learned

- If time is available, use it
- Setting goals, desired outcomes very important
- Understand what is already being measured
- What is needed to be measured to determine if reaching goals?
- Then set the metrics



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THANK YOU

Doug Scott

Vice President for Electricity
and Efficiency

dscott@gpisd.net