

Performance- Based Regulation State Working Group

Expert Webinar September 1, 2022

Agenda

3:00-3:05 PBR SWG Updates

3:05 – 4:15 Expert webinar: presentations followed by Q&A

4:15 – 4:30 PBR SWG roundtable on performance targets

Facilitators

Elliott J. Nethercutt, NARUC

Danielle Sass Byrnett, NARUC

Speakers

Moderator: Hon. Abigail Anthony, Rhode Island

Speakers:

Jessica Shipley, Regulatory Assistance Project

Gennelle Wilson, Rocky Mountain Institute

Logistics and Participation

- Please mute when not speaking.
- During the presentation portion today, please feel free to drop any questions into the chat and ask questions during Q&A.
- We will record and post the presentation portion on NARUC's website.
- After the presentation and Q&A for speakers, we will 'close the door' for a roundtable discussion among members that will not be recorded.

NARUC Performance-Based Regulation State Working Group

Working Group Chair: Commissioner Abigail Anthony, Rhode Island
Working Group – 30 Jurisdictions

- Arizona
- British Columbia, Canada
- Colorado
- Connecticut
- District of Columbia
- Delaware
- Georgia
- Hawaii
- Idaho
- Illinois
- Indiana
- Kentucky
- Massachusetts
- Maryland
- Maine
- Michigan
- Minnesota
- Missouri
- North Carolina
- Nevada
- Ohio
- Oregon
- Oklahoma
- Puerto Rico
- Rhode Island
- Texas
- Utah
- Vermont
- Washington
- Wisconsin

Inquiries: enethercutt@naruc.org

Opening Remarks

Hon. Abigail Anthony, Rhode Island

September 1 2022

Performance Targets

NARUC PBR State Working Group

Jessica Shipley, Senior Associate

jshipley@raponline.org

Agenda

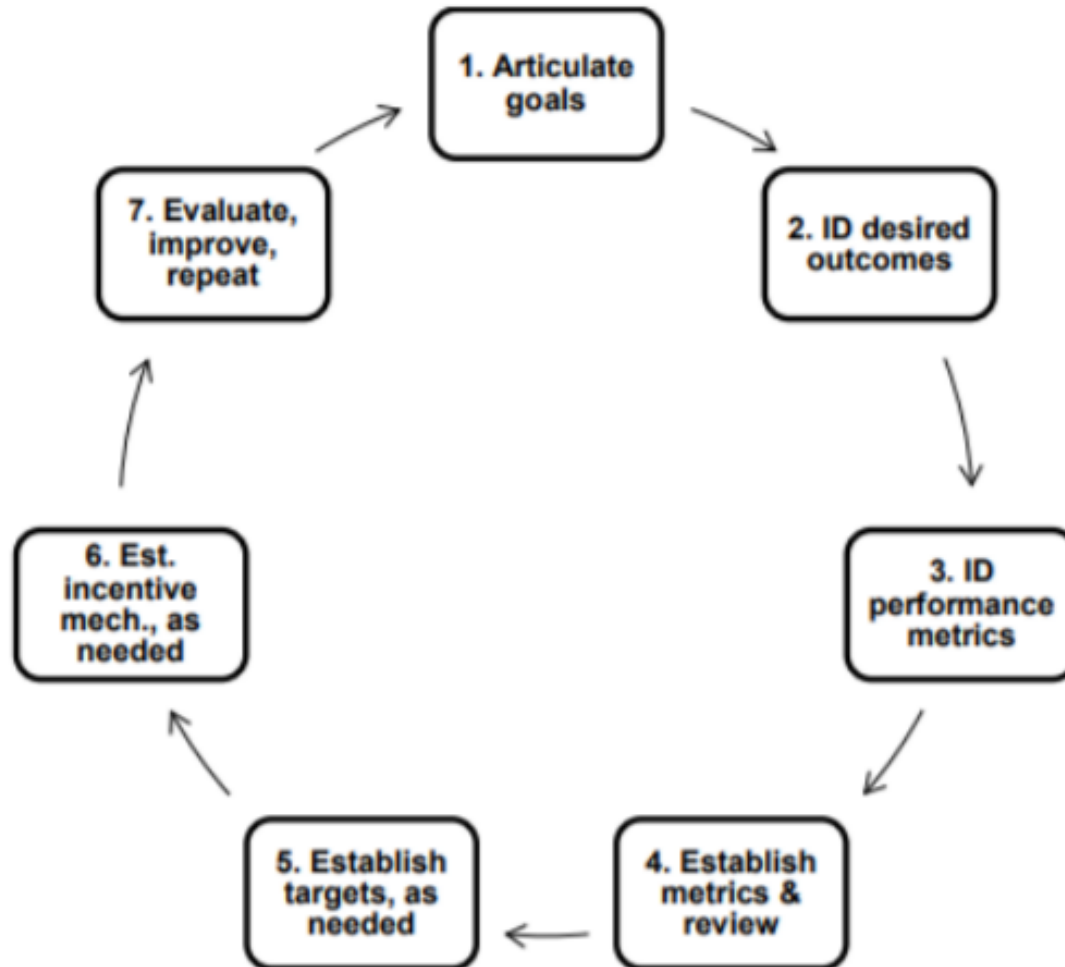
1. Quick Recap: Goals, Outcomes, Metrics
2. Setting Targets
3. Ideas from the Energy Efficiency Experience

1

Quick Recap: Goals, Outcomes, Metrics



PBR Design Considerations



Graphic: MN PBR docket

<https://www.edockets.state.mn.us/Efiling/edockets/searchDocuments.do?method=showPoup&documentId=%7BF0E82E68-0000-CF1F-93DB-4CE874187020%7D&documentTitle=20191-148970-01>

PBR Design Considerations



Graphic: MN PBR docket

<https://www.edockets.state.mn.us/Efiling/ecockets/searchDocuments.do?method=showPoup&documentId=%7BF0E82E68-0000-CF1F-93DB-4CE874187020%7D&documentTitle=20191-148970-01>

Articulate Goals

Examples:

- Affordability
- Improved customer experience
- Environmental protection



Develop Measurable Performance Outcomes

Examples:

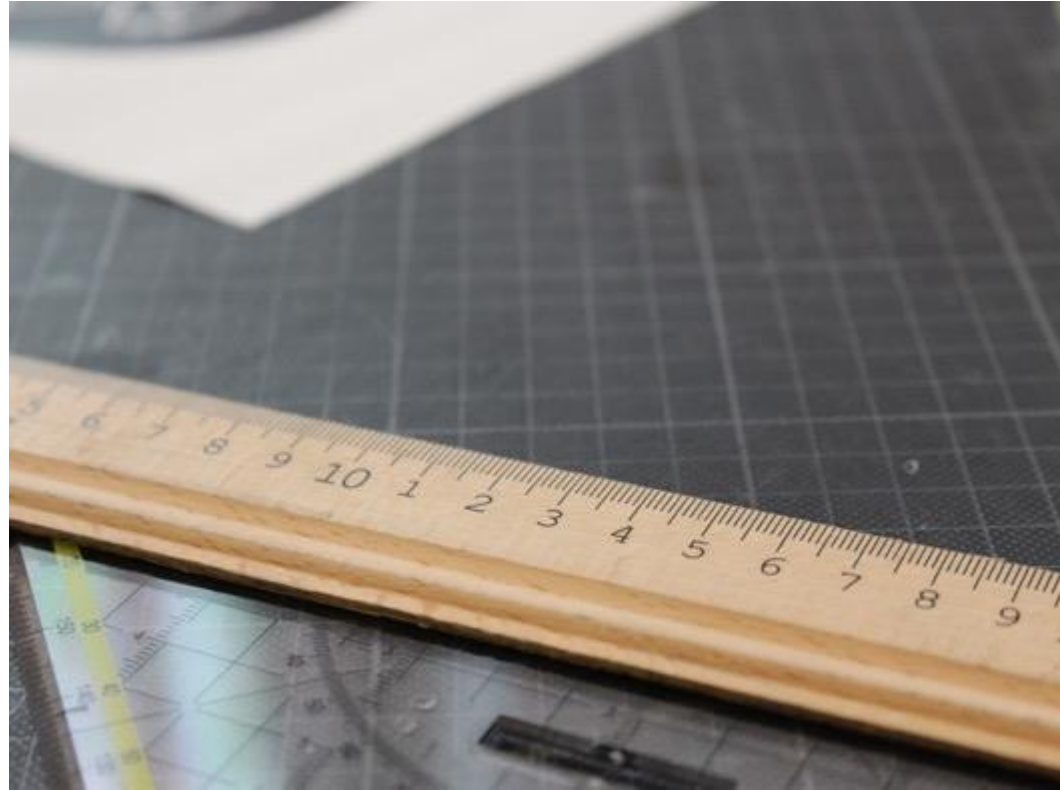
- Declining customer bills
- Customer engagement
- Reduced peak load



Create Metrics

Examples:

- Average monthly bills for residential customers (\$)
- Percent of retail load reduced through EE programs (%)
- MW reduced from peak (MW)



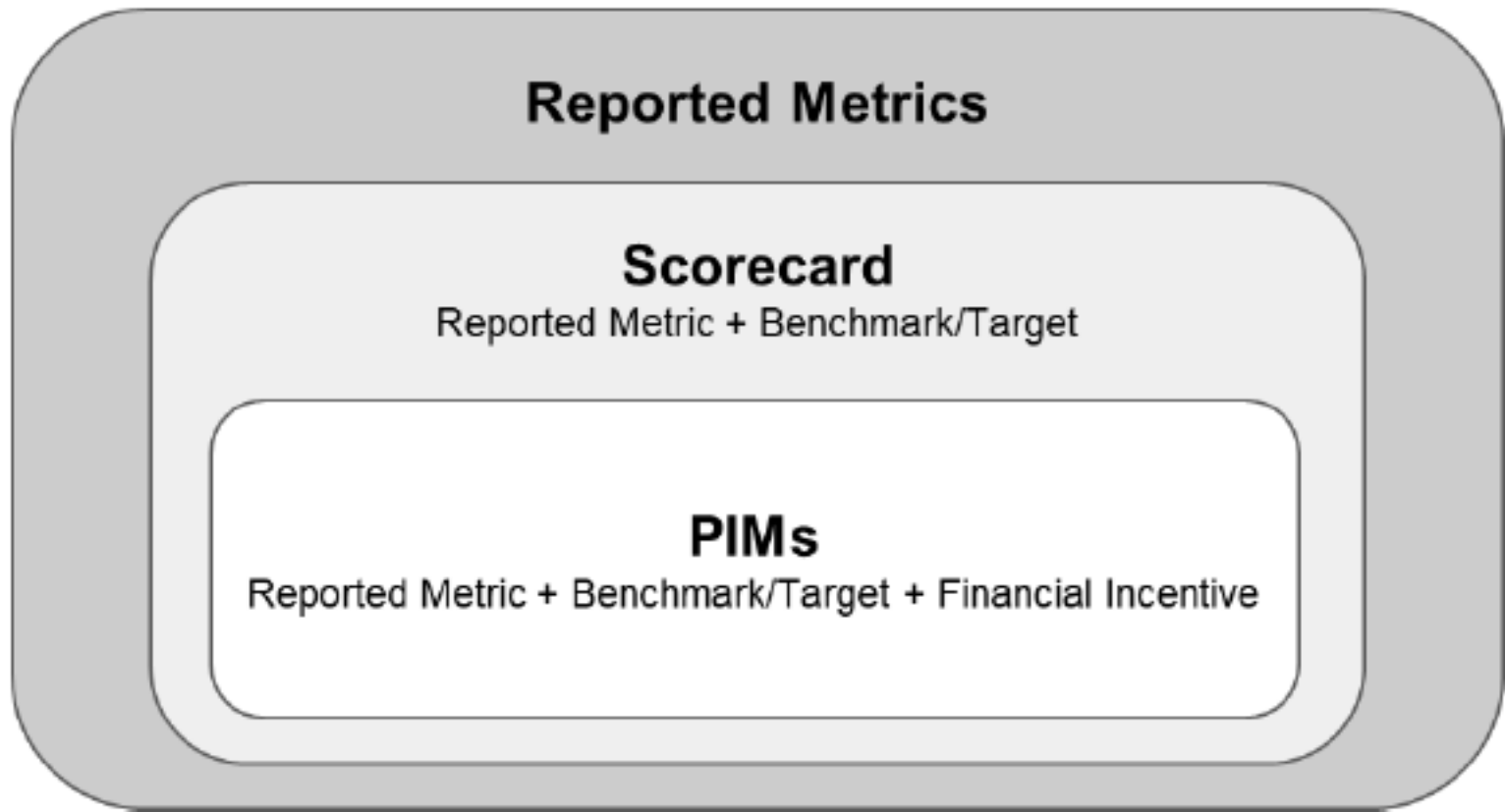
Optional: Establish Performance Targets

Example:

- 2% reduction in average monthly residential bills
- 1.5% efficiency savings per year
- 60MW peak demand reduction



Performance Tracking Options



Source: Hawaii PBR Phase 1 Staff Proposal, page 32 (Figure 6)

2 Setting Targets



Considerations for Setting Targets



Clarify priorities



Take time to understand the data



Consider metrics and targets outside of rate cases



Clarify understanding of how utility actions influence outcomes



Communicate the connection between targets and the public interest



Learn from challenges

Setting Targets

- Where have we been? Do we have historical data?
 - E.g. reliability scores of various kinds

Year	Major Events Included			
	SAIDI	SAIFI	MAIFI	CAIDI
2012	141.1	1.130	1.918	124.9
2013	117.0	1.070	1.633	109.3
2014	131.9	1.045	1.561	126.2
2015	131.8	0.967	1.812	136.3
2016	106.7	1.021	1.596	104.5
2017	357.8	1.466	2.295	244.1
2018	282.3	1.053	1.423	268.0
2019	1,363.3	1.872	1.780	728.2
2020	450.6	1.443	1.546	312.1
2021	588.3	1.688	1.876	348.5

Pacific Gas & Electric,
2021 Electric
Reliability Report

Setting Targets

- Where do we want to go? Is there a legislatively mandated or otherwise broadly accepted goal?
 - E.g. reduce carbon emissions a certain amount by X date

California	100% carbon-free electricity by 2045
Colorado	100% carbon-free electricity by 2050 for Xcel Energy
Connecticut	100% carbon-free electricity by 2040
District of Columbia	100% renewable energy by 2032 through the RPS
Hawaii	100% renewable energy by 2045 through the RPS
Illinois	100% clean energy by 2050
Louisiana	Net zero greenhouse gas emissions by 2050
Maine	100% clean energy by 2050
Maryland	Net-zero greenhouse gas emissions by 2045
Massachusetts	Net-zero greenhouse gas emissions by 2050
Michigan	Economy-wide carbon neutrality by 2050
Nebraska	Net-zero carbon emissions from generation resources by 2050
Nevada	100% carbon-free electricity by 2050
New Jersey	100% carbon-free electricity by 2050
New Mexico	100% carbon-free electricity by 2045
New York	100% carbon-free electricity by 2040
North Carolina	Carbon neutrality in the electricity sector by 2050
Oregon	Greenhouse gas emissions reduced 100 percent below baseline emissions by 2040
Puerto Rico	100% renewable energy for electricity by 2050
Rhode Island	100% renewable energy electricity by 2033
Virginia	100% carbon-free electricity by 2045 for Dominion Energy
Washington	100% zero-emissions electricity by 2045
Wisconsin	100% carbon-free electricity by 2050

Setting Targets

- Is there available, trusted research on what is needed?

Energy burden is defined as the percent of household income spent on energy bills.

Energy burden is a key component to determining if a housing unit is affordable. The most commonly used metric is that an affordable energy burden must be no higher than six percent of the household's income³.

What is an Energy Burden?

Generally, an affordable home energy bill is recognized as 6% or less of a household's gross income⁴. A household is considered to have an energy burden when more than 6% of that household's income is utilized to pay for their home energy costs.

Definition and Drivers of High Energy Burdens

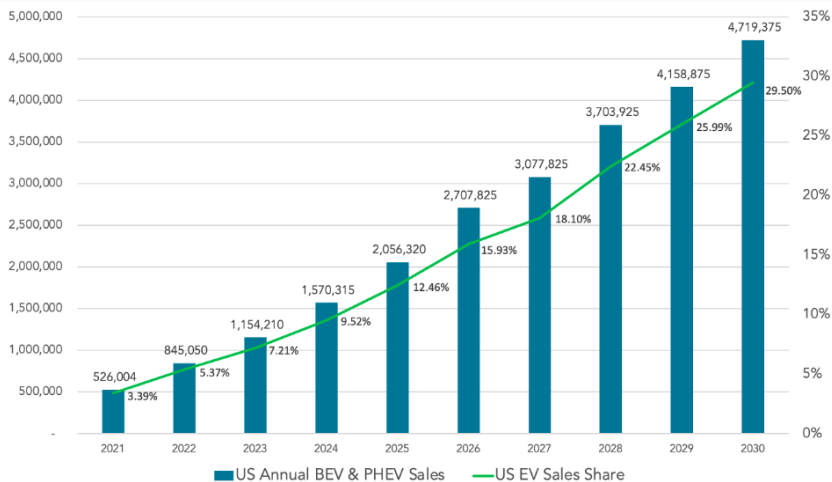
High energy burdens are often defined as greater than 6% of income, while *severe energy burdens* are those greater than 10% of income (APPRISE 2005).¹⁰ Past

Setting Targets

- Available research or modeling on what is “business as usual”?

On what is achievable under current circumstances?

US EVs (BEV & PHEV) Sales & Sales Share Forecast: 2021-2030



Historical Sales Data: GoodCarBadCar.net, InsideEVs, IHS Markit / Auto Manufacturers Alliance, Advanced Technology Sales Dashboard | Research & Chart: Loren McDonald/EVAdoption

<https://evadoption.com/ev-sales/ev-sales-forecasts/>

	Reference Case		
	2023	2024	2025
Storage Resources			
6hr Batteries (MW)	0	37	37
Pumped Storage (MW)	0	200	200
Total Storage (MW)	0	237	237
Capacity Fill (MW)	123	79	358
Total Dispatchable Capacity (MW)	123	316	595

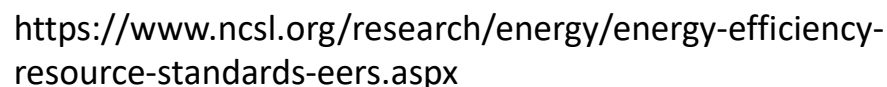
From PGE’s 2019 IRP, Executive Summary p19

<https://portlandgeneral.com/about/who-we-are/resource-planning>

3 Ideas from the Energy Efficiency Experience



- ~30 states have EERS targets, fewer have also added incentives

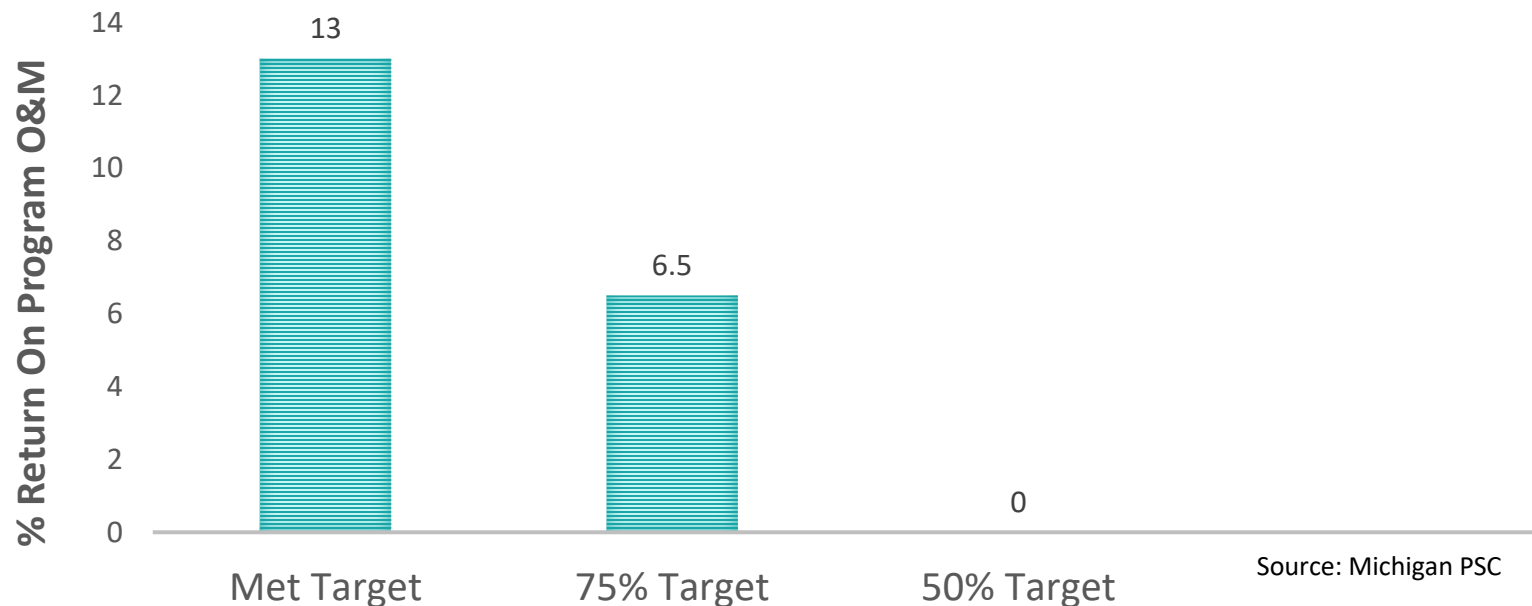


Using Multiple Targets

- Using multiple targets to create a multi-factor incentive
 - ~6+ states have multiple kinds of EE targets within their EE incentive
 - E.g. per-capita energy use, low-income housing EE, large user energy demand, peak demand reduction, first year kWh savings

Using Multi-part Targets: Michigan DR incentives

- Tied to IRP goal of 49 MW/yr. incremental DR growth
- Incentive for achievement of each 1% increment between 50-100% of IRP goal



Resources:

Case No. U-18369 (9/15/17): “financial incentive for DR is reasonable and ... providers and other interested parties may propose appropriate incentives as part of the DR reconciliation proceeding.” Consumers Energy
DR Reconciliation (Case No. U-20164) (7/18/19)

Adding New Metrics/Targets; Adjusting Existing Targets

- Adding new metrics and targets as priorities evolve
 - E.g. fuel neutral savings, carbon reductions, distribution of benefits, participation
- New York added new targets to their EE program in 2018
 - 31 Tbtu of customer-level energy reduction
 - 5 Tbtu in reduction through heat pumps
 - Accelerated electricity-specific sub-target of 3% reduction of forecasted sales in 2025
- Use a collaborative to build consensus around targets and modifications

One More Thought on EE Targets

- Perhaps overly reliant on historical cost-effectiveness methods which tend to under-value hard-to-quantify benefits
- New resources point to an expanded view of EE value

National Standard Practice Manual

For Benefit-Cost Analysis of Distributed Energy Resources

AUGUST 2020



Assessing the Interactive Impacts of Energy Efficiency and Demand Response on Power System Costs and Emissions

Andrew Satchwell, Brady Cowiestoll, Elaine Hale, Brian Gerke, Paige Jadun, Cong Zhang, and Samanvitha Murthy

August 2022

This work was funded by the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy Building Technologies Office under Contract No. DE-AC02-05CH11231.



Key Takeaways

- Defining goals and objectives will help inform the rest of your process
- Strive for targets that are ambitious but achievable, in line with policy or regulatory goals and in support of public interest outcomes
- Build in systems and processes for evaluation and improvement (and expect to use them!)

RAP Resources

- [Next-Generation Performance-Based Regulation: Volume 1 \(Introduction—Global Lessons for Success\)](#)
- [Next-Generation Performance-Based Regulation: Volume 2 \(Primer—Essential Elements of Design and Implementation\)](#)
- [Next-Generation Performance-Based Regulation: Volume 3 \(Innovative Examples from Around the World\)](#)
- [Performance Incentives for Cost-Effective Distribution System Investments](#)
- [Protecting Customers from Utility Information System and Technology Failures](#)
- [Metrics to Measure the Effectiveness of Electric Vehicle Grid Integration](#)

About RAP

- RAP is an independent, non-partisan, non-governmental organization dedicated to accelerating the transition to a clean, reliable, and efficient energy future.
- RAP provides technical and policy support at the federal, state and regional levels, advising utility and air regulators and their staffs, legislators, governors, other officials, and national organizations.



Q&A

Considerations in Performance Target Setting & Implementation

NARUC Performance-Based
Regulation State Working Group

September 1, 2022

Gennelle Wilson, gwilson@rmi.org

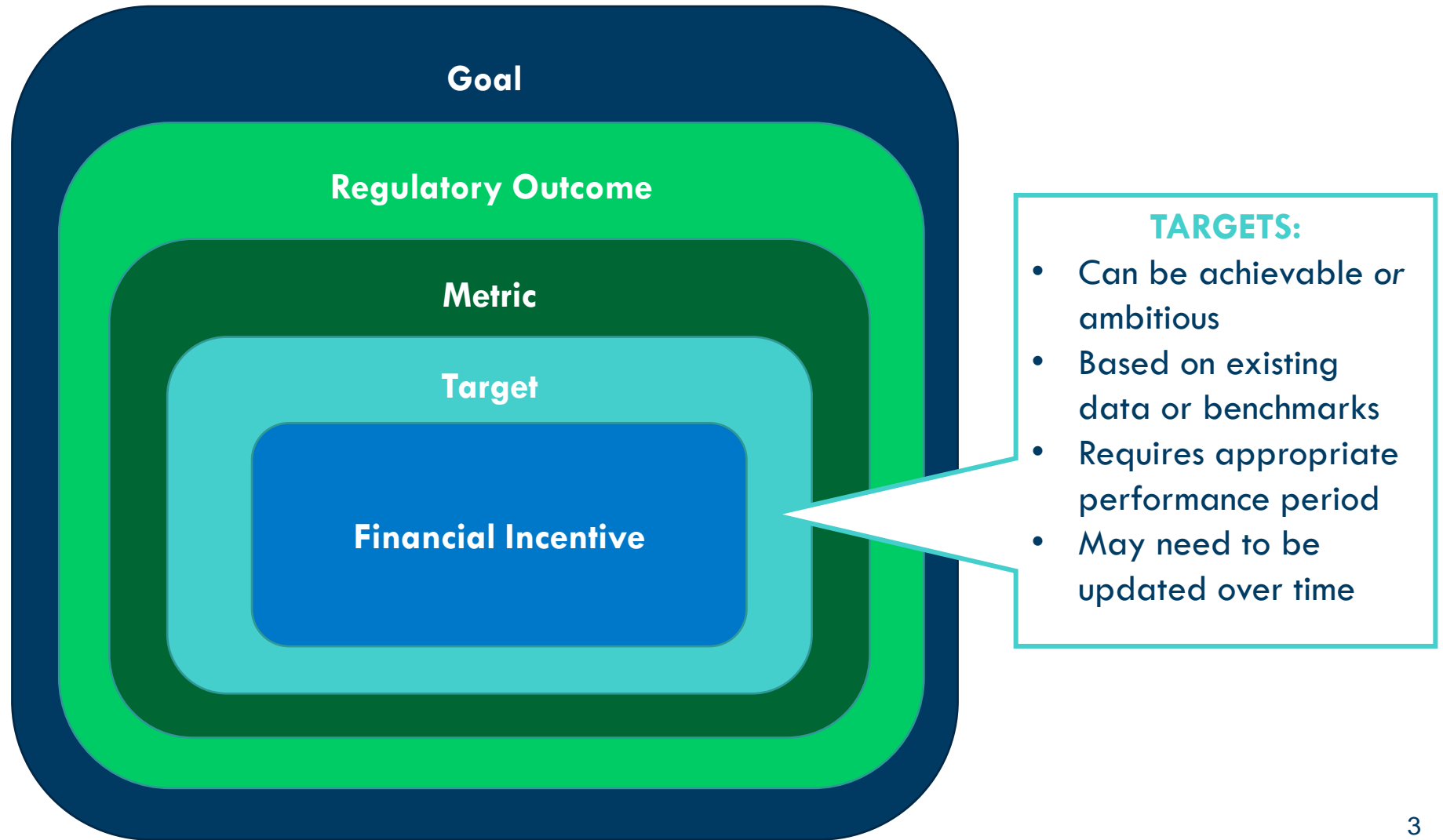




Objectives

- 1. Explore key considerations for performance target setting**
- 2. Discuss relevant factors in the implementation of performance targets**

The role of targets in performance mechanisms





Considerations for performance target setting

1. Benchmarking without historical utility performance data
2. Structure of performance targets
3. Analytical treatment of performance data
4. Information asymmetry and strategies to address it
5. Cost implications of performance target mechanisms

Benchmarking with & without historical utility performance data

- **Multiple ways to anchor targets**
 - Historical data
 - Policy goals
 - Utility commitments
 - Assumptions used in the planning process
 - Potential studies
 - Performance of peer utilities
- **Potential scarcity of utility historical data for benchmarking, particularly for emergent outcomes**

Xcel Energy Announces Plan to Power All its Vehicles With Carbon-Free Energy By 2050

Xcel Energy today announced a new transportation vision that drives toward providing the infrastructure and energy to run all vehicles in its service area on carbon-free electricity or other clean energy by 2050.

Aug. 2, 2022

Governor McKee Announces Plan for Direct Rate Relief to Over 39,000 Low-income Customers Electricity Bills This Winter

Published on Wednesday, August 10, 2022

Con Edison Expands Clean Energy Commitment On Path To Net-Zero Emissions



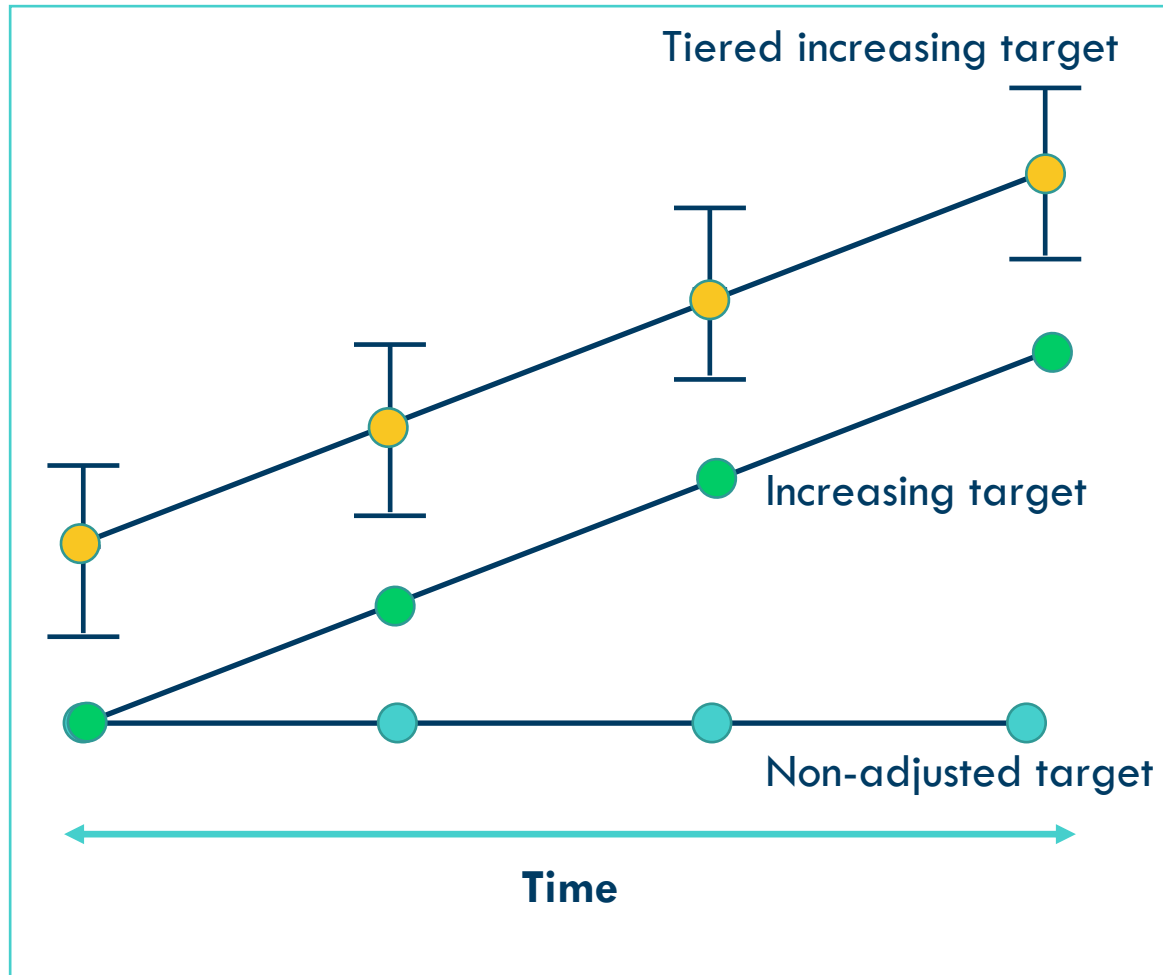
Company Is Preparing Grid for Renewable Future and Impact of Climate Change, Moving to Empower Its Customers

JUNE 7, 2021

Xcel Energy, Crestone Peak Resources, and Project Canary Form Certified Low-Emission Intensity Natural Gas Partnership Program

Structure of performance targets

Some Examples of Target Structures



The D.C. Sustainable Energy Utility's (SEU) Reduce Energy Consumption Performance Benchmark

Consists of an annually increasing target for MMBtu reduction over a five-year contract period. The fifth year's target is an ultimate target, meaning that the SEU can miss or achieve the annual targets in Y1-Y4, but as long as it achieves the Y5 target, SEU is eligible to receive the full incentive for all five years.

Analytical treatment of performance data

- **How should data be treated in calculating the performance target and metric?**
 - E.g., Simple average, CAGR, median, standard deviation, marginal or cumulative, etc.
- **What key factors have changed over time?**
- **How should outliers be treated?**
 - E.g., major event days for reliability

Example: Interconnection Approval PIM, Hawaiian Electric

Metric: mean average business days to complete all steps to interconnect DER systems <100kW in a calendar year.

Target: annually decreasing tiered target # of business days

Calculation concern: a simple average is particularly vulnerable to skewness from outliers. The Commission decided to cap outliers at 2 SD above the mean.

Information asymmetry and strategies to address it

■ Questions:

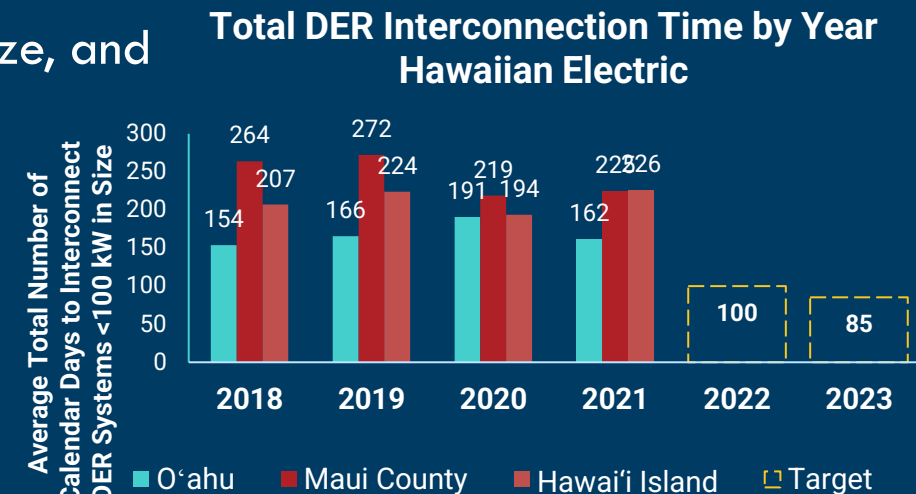
- What information do other stakeholders and the PUC need to propose and set targets?
- Can the commission compel the utility to share the necessary information?

■ Strategies to remedy:

- Successive and iterative use of information/data requests to solicit utility data that may assist benchmarking and target setting.
- Establish a performance metrics first with intention to add a target in the future.

Example: Interconnection Approval PIM, Hawaiian Electric, cont'd.

- Requests for a data set of # days to interconnect for ~9,000 interconnected systems in three years, by:
 - step of the interconnection process,
 - island,
 - system size, and
 - program



Cost implications of performance target mechanisms

- **What is the financial implication of establishing a performance target for a utility?**
 - Cost categories
 - Activities – program costs, investments in infrastructure, customer communications, etc.
 - Oversight & Tracking - may include new systems, database management, person hours, etc.
 - Reporting – may include website costs, person hours, etc.
- **How sizable are the costs estimated to be?**
- **Should additional funding be approved?**
 - Answer varies depending on: context, importance of underlying policy/regulatory goal and outcome, metric, existing cost recovery, etc.
 - When in doubt, burden of proof should be on utility to demonstrate that their current cost recovery wouldn't be sufficient to meet targets.



Relevant factors in the implementation of performance targets

- Modification of performance targets and the trade-offs
- Presenting the data and making it accessible

Modification of target mechanisms

When should a target be modified?

Circumstances that *may (or may not)* warrant a target's modification:

A change in state policy or regulatory goals

A change in metric

Continuous over/under performance

A change in the utility's operating environment

Examples:

- ConEd, New York modified the targets for its Deeper Savings and Beneficial Electrification EAMs in 2020 upon PSC approval of new energy efficiency targets.
- Minnesota DSM Shared Savings Financial Mechanism target was modified in 2020 to increase the target such that savings equal to or exceeding 1% for electric utilities to 0.7% for natural gas utilities would be eligible for an incentive, with potential to earn higher incentives if savings of 2% and 1.2%, respectively, are achieved.

Trade-offs of target modification

Collecting
consistent data
for benchmarks



Utility &
ratepayer
financial
implications



Regulatory
stability



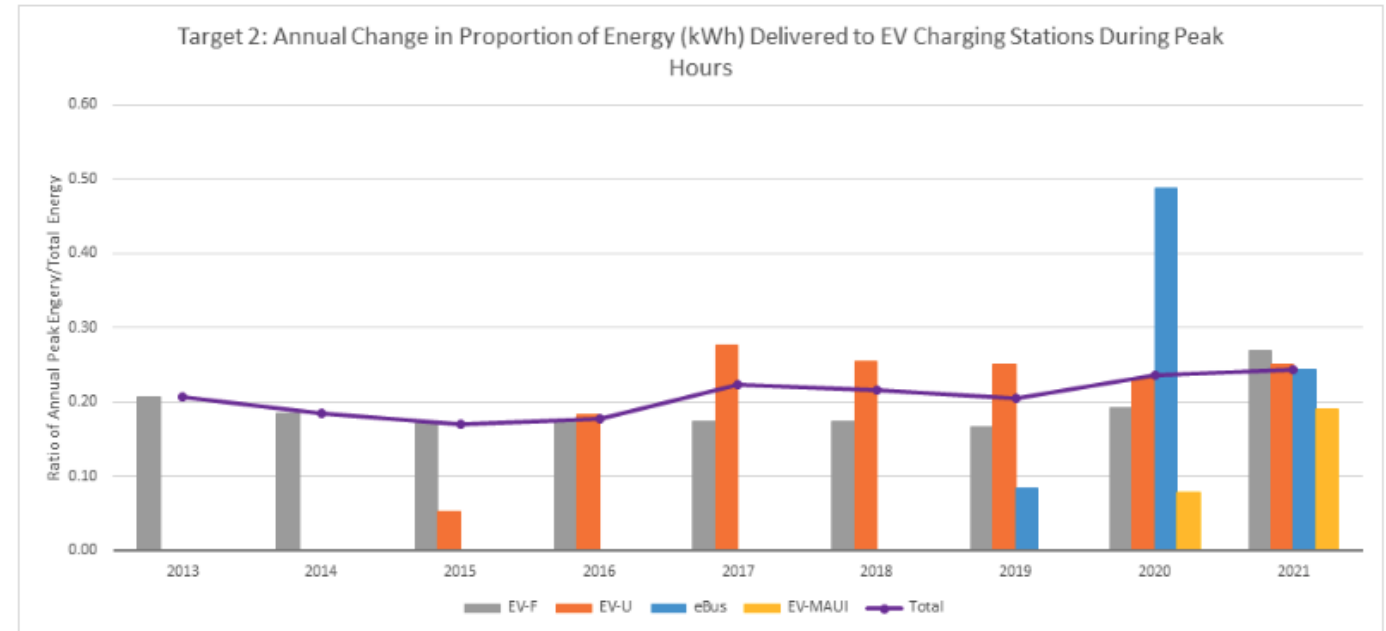
Presenting the data and making it accessible

■ Format and venue

- Dashboard v. report
- Website v. docket
- Trend line v. single annual value

■ Additional reporting requirements

- Is the metric alone sufficient?
- Is more data needed to increase transparency?



Target 2: Annual Change in Proportion of Energy (kWh) Delivered to EV Charging Stations During Peak Hours	2013	2014	2015	2016	2017	2018	2019	2020	2021
Total	21%	19%	17%	18%	22%	22%	20%	24%	24%
EV-F	21%	19%	17%	18%	17%	17%	17%	19%	27%
EV-U	0%	0%	5%	18%	28%	25%	25%	23%	25%
eBus	0%	0%	0%	0%	0%	0%	8%	49%	24%
EV-MAUI	0%	0%	0%	0%	0%	0%	0%	8%	19%

**Scorecard Target 2 is achieved for every year that the Cumulative ratio of peak load to total load declines relative to the previous year.*



Thank you!

Upcoming Events for PBR SWG

- October Topic: Designing Effective Performance Incentives

- A. **Expert Webinar:** 60-minute virtual webinar; states hear multiple 10-minute presentations from each other and experts in the field. The prepared presentations will be recorded and posted to a public webpage
- B. **Ruminate & Illuminate:** 75-minute peer sharing call; one state will propose a question or issue they are seeking peer feedback from the working group members on. Then, the state who poses the question will receive feedback from other working group members. NARUC staff will develop a one-page summary with ideas and resources for consideration.
- C. **Roundtable:** virtual meeting; WG members receive a prompt and have a few minutes to respond with their perspective.

Other NARUC CPI Events

- **Regulators' Roundtable on Interconnection Queues**
 - September 13, 2022 | 11:30 am - 1:00 pm (EST)
 - <https://uso2web.zoom.us/j/5018687844>
- **Financial Toolbox Webinar on ADMS/DERMS**
 - September 19, 2022 | 3:00 – 4:30 pm (EST)
 - https://uso2web.zoom.us/webinar/register/WN_qaeSgCstR4GTDHUwTVogRA
- **DER Integration Workshop**
 - September 20 – 21, 2022 | Washington, DC
 - <https://maxxwww.naruc.org/forms/meeting/MeetingFormPublic/view?id=10F272000000129>
- **NCEP Annual Meeting**
 - September 22 – 23, 2022 | Washington, DC
 - <https://maxxwww.naruc.org/forms/meeting/MeetingFormPublic/view?id=10F731000000001>