

STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter of the Commission's
own motion to establish a workgroup
to investigate appropriate financial
incentives and penalties to address outages
and distribution performance moving forward.

Case No. **U-21400**

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**MICHIGAN PUBLIC SERVICE COMMISSION STAFF'S
COMMENTS**

**MICHIGAN PUBLIC SERVICE
COMMISSION STAFF**

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DATED: December 19, 2023

I. Comments

On April 24, 2023, the Michigan Public Service Commission (“Commission”) issued an order in Case No. U-21400 directing Commission Staff (“Staff”) to convene a Financial Incentives and Disincentives workgroup as part of the MI Power Grid initiative. The order directed Staff to file a report of the workgroup’s investigations and findings by December 31, 2023.

On August 30, 2023, the Commission issued an order seeking comments and reply comments from interested parties on a straw proposal that included candidate distribution performance metrics. Initial comments were received on September 22, 2023, and reply comments were received on October 20, 2023. In addition, stakeholder sessions were held on October 10, 2023, and November 30, 2023.

Attached to this filing is a status report and revised straw proposal (Attachment A) which attempts to update the original proposed candidate metrics in response to the comments filed and feedback received during the stakeholder sessions.

Staff recommends the Commission put the revised straw proposal out for comment from interested parties, utilizing a similar process as was used for the initial straw proposal. Staff recommends that the Commission solicit comments from stakeholders by February 2, 2024, and reply comments by March 1, 2024. Should this schedule be adopted, Staff intends to hold another stakeholder workgroup session on February 12, 2024.

As noted on page 7 of the revised straw proposal, Staff believes it would be helpful for the Commission to solicit feedback from interested parties on the following subjects:

- Feedback on revised metrics
- Incentive/disincentive potential
 - Allocation by metric
 - Symmetric incentives for SAIDI and storm response metrics
- Focus area for worst performing circuit metric (system- vs. circuit-level)

The Commission may also wish to invite comment on any other issues related to the revised straw proposal interested parties would like to provide.

Respectfully submitted,

**MICHIGAN PUBLIC SERVICE
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ATTACHMENT A

Financial Incentives and Disincentives Workgroup

December 2023 Status Update

Revised Straw Proposal for Reliability Metrics

Background

On April 24, 2023, the Michigan Public Service Commission (“MPSC” or “Commission”) issued the opening order in Case No. U-21400, which directed Commission Staff to convene a Financial Incentives and Disincentives workgroup as part of the MI Power Grid Initiative and file a report of the workgroup’s investigations and findings by December 31, 2023.

In directing this action, the Commission referred to numerous prior decisions to address distribution system reliability and safety. The opening order also stated, “an initial focus of the Financial Incentives and Disincentives workgroup shall include developing appropriate metrics relating to reliability including, but not limited to, SAIDI [System Average Interruption Duration Index] (including and excluding MEDs [major event days]), SAIFI [System Average Interruption Frequency Index], CEMI [Customers Experiencing Multiple Interruptions], CAIDI [Customer Average Interruption Duration Index], and resilience, including, but not limited to, downed wire response and the frequency and duration of outages during extreme weather, and shall use the recently updated Service Quality rules as a baseline.”¹

On August 30, 2023, the Commission issued an order with a straw proposal for candidate distribution performance metrics and requested feedback from stakeholders through comments and reply comments.² In addition, the Commission hosted stakeholder technical conferences on October 10, 2023 and November 30, 2023. The first stakeholder technical conference discussed the initial straw proposal and stakeholder comments. Discussion in the second meeting focused on proposed revisions to the initial straw proposal based on stakeholder feedback.

This status update first summarizes stakeholder feedback received on the initial straw proposal and then describes the proposed revisions to reliability performance metrics. This update also proposes a basis for the incentive/disincentive pool and allocation to each metric. Finally, the implementation steps for the reliability metrics are discussed and topic areas for further feedback from stakeholders.

Summary of Stakeholder Feedback on Initial Straw Proposal

In reviewing feedback from stakeholders and discussion during the technical conferences, the following themes were shared among the comments:

- **Address reliability performance** – Stakeholders strongly supported addressing reliability with performance metrics but differed over approach and scope. Some parties supported symmetric incentives for reliability outcomes while many stakeholders advocated for “downside only” metrics that penalize utilities for failing to meet reliability benchmarks. Utilities raised concerns

¹ See Opening Order at p. 12. For reference, SAIDI, SAIFI, CEMI, and CAIDI are electric utility reliability metrics defined by the Institute of Electrical and Electronics Engineers (“IEEE”).

² See August 30, 2023 Order issued in Case No. U-21400. The initial straw proposal is also attached in Appendix 2.

with the potential complexity of the proposed CAIDI metrics, particularly CAIDI (only MEDs). Several stakeholders also advocated that the Commission should expand the initial scope beyond reliability metrics to a broader, holistic review of performance-based regulation. Finally, several stakeholders commented that the reliability metrics should be assessed as bill credits to the customers affected by sustained outages. The revised proposal retains an initial focus on reliability but includes several revisions to address stakeholder feedback on this topic.

- **Complement Service Quality Rules** – Another theme among stakeholder comments was potential areas of overlap between the proposed metrics and current Service Quality Rules. The revised proposal excludes SAIFI and the CEMI metrics. SAIFI was excluded to focus primarily on improving outage duration, which is an important near-term priority. The initial proposal included CEMI₄ and CEMI₇ as penalty-only metrics, and some stakeholders noted the overlap with Service Quality Rules. The Service Quality Rules include a standard for CEMI₄ and bill credits for customers experiencing 6 or more interruptions. The revised proposal has removed the CEMI metrics to avoid this overlap. During the November 30, 2023 technical conference, some stakeholders expressed support for retaining CEMI₄ as a symmetric metric. Stakeholders will have additional opportunities to provide feedback on this topic during the next steps in this proceeding.
- **Implement incentives/disincentives through stakeholder process** – Stakeholders have disagreed on the overall scope and pace of implementing performance metrics but generally supported a stakeholder-based process. Broadly, utilities have urged a slower, deliberate approach with lower potential exposure to penalties. Several other stakeholders have argued for a quicker pace of implementation, broader scope, and greater levels of potential penalties for poor reliability outcomes. The revised proposal balances these objectives while focusing on providing further opportunities for stakeholder input in the next stages of this proceeding.
- **Address equity in reliability metrics** – Several stakeholders noted that this process should address equity comprehensively, including the reliability metrics. Through the next steps in this proceeding, the workgroup will continue reviewing opportunities to advance equity in these metrics, the additional Reliability + metrics described in the opening order, and other priority regulatory proceedings.³

The next section summarizes the proposed revisions to the Initial Straw Proposal and then describes each proposed metric in further detail.

³ In Case No. U-21122, utilities over 1,000,000 customers are currently reporting reliability data by circuit, census tract, and ZIP Code. This reporting can be combined with work to identify environmental justice communities directed under recently passed Senate Bill 271.

Revised Straw Proposal for Reliability Performance Metrics

Table 1 displays the proposed metrics, current baseline performance for Michigan’s two largest utilities, potential target levels for each metric, and incentive/disincentive mechanism for consideration by the workgroup.

Table 1: Proposed Reliability Performance Metrics

Metric	Baseline		Target Performance		Potential Incentive/Disincentive Mechanism
	DTE	Consumers	Penalty	Incentive	
SAIDI (Excluding MEDs)	141 (average using minimum 2 of 3 years from 2021-2023)	180 (average using minimum 2 of 3 years from 2021-2023)	5% reduction from baseline over 5 years (linear glidepath)	1 st. dev. deadband + 10% reduction from baseline over 5 years (linear glidepath)	Symmetric incentive/disincentive 30% of total pool Incentive/penalty scales linearly over 1 st. dev. range
SAIDI (All Weather) (5-yr average)	DTE (2022): 563 DTE(2023 YTD) ² : 770	CE (2022): 597 CE(2023 est.) ³ : 773	5% reduction from baseline over 5 years (linear glidepath)	1 st. dev. deadband + 10% reduction from baseline over 5 years (linear glidepath)	Symmetric incentive/disincentive 30% of total pool Incentive/penalty scales linearly over 1 st. dev. range
Storm Restoration (48-hour storm response)	DTE(2023): ≈ 76% DTE (2024): 80%	CE(2023): ≈ 76% Proposed (2024): 80%	1% improvement/yr. from baseline over 5 years	Exceed recent improvement trend (5%/yr.) from baseline to 90%	Symmetric incentive/disincentive 20% of total pool
Worst performing circuits	Reports use multiple metrics	Reports by Circuit-level SAIDI (no MEDs)	Circuits ranked by SAIDI (exc MEDs) No circuits remain in top 10 for more than 2 of past 5 years	N/A	Penalty only 20% of total pool Seeking feedback on System- or Circuit-level measure

SAIDI (excluding MEDs)

Metric description – The revised proposal includes SAIDI (excluding MEDs) instead of CAIDI (excluding MEDs) to address complexities with CAIDI noted by stakeholders in comments. The replacement metric retains an explicit focus on reducing outage duration. The utilities currently report this information to the MPSC and the utility’s annual SAIDI (excluding MEDs) value would be assessed according to the penalty and incentive thresholds described below.

Current performance – Table 1 displays proposed baseline values for DTE and Consumers using the average of lowest 2 values in the past 3 years. These were 141 minutes for DTE and 180 minutes for CE. The proposed baseline method addresses differences in the recent trends for each utility on this metric, which was highlighted in the presentation during the November 30, 2023 stakeholder technical conference.

Target performance – The interim penalty thresholds are informed by the Attorney General’s proposal to achieve a 5% cumulative reduction in this outcome over 5 years. The proposed revision treats this threshold as a “backstop” for penalties. That is, utility performance needs to improve from the baseline during each year to avoid incurring a penalty. The penalty threshold for interim years would be defined by a linear glidepath to the 5% cumulative improvement over 5 years.

The incentive threshold is predicated on achieving faster progress towards the industry median benchmark for this outcome across both utilities. Currently, DTE would need to improve by approximately 10% over the next 5 years. The Incentive threshold was developed utilizing this 10% improvement rate plus a deadband that incorporates the historic level of variability between 2012-2023 for this outcome. Figures 1 and 2 display the proposed trajectories for these utilities and Table 3 provides the numeric details on this metric for each utility.

Incentive/Disincentive Mechanism – The revised proposal allocates 30% of the total incentive/disincentive pool to this metric and retains a symmetric opportunity to earn an incentive or incur penalties for reliability below the threshold. This update also proposes to scale the incentive or penalty linearly over a one standard deviation range. Using Figure 1, the following example illustrates how the penalty mechanism would work. Using the values for 2024, the utility would incur a penalty if the metric (SAIDI excl MEDs) exceeds a value of 140 minutes. The penalty would increase for values above 140 minutes until reaching the maximum at 162 minutes. For values within this range, the penalty is scaled proportionately. A metric value of 151 is the midpoint of the range and would incur half of the total penalty. Metric values that exceed the maximum value would incur the maximum penalty. The incentive mechanism would operate symmetrically for metric values below the incentive threshold of 116 minutes and earn the maximum incentive value for performance below 93 minutes.

SAIDI (All Weather)

Metric description – Under the revised proposal, the Commission would adopt SAIDI (all weather) as a performance metric to replace CAIDI (only MEDs) and measure performance using a 5-year rolling average. This revision addresses concerns about the complexity of the CAIDI (only MEDs) metric while still addressing outage duration during all weather conditions.

Current performance – Table 1 shows current performance by both utilities, which is in the 4th quartile according to the annual IEEE utility benchmarking study.

Target performance – DTE has expressed a goal of reaching industry median performance for this metric. However, in recent years and particularly for 2023, utilities’ SAIDI (all weather) performance has been increasing (worse performance) and far exceeds industry median performance. As interim measures, this revision proposes a 5% cumulative improvement in the 5-yr average as a threshold for assessing penalties. For positive improvement towards the industry median, this update proposes a 10% improvement relative to recent performance with the addition of a deadband to address the significant annual variability in this metric.

This formulation is similar to the SAIDI (excluding MEDs) metric by using a “backstop” measure of performance as a threshold for penalties. For this metric, the penalty threshold still requires improvement from the current baseline. A deadband is applied to the incentive range to reduce the likelihood that a utility could earn the incentive solely by favorable weather. In addition, the outcome is measured using the 5-year average of performance, which further addresses annual variability from weather conditions.

Figures 3 and 4 display the proposed thresholds for DTE and CE on this metric. Table 4 shows the proposed values for both utilities.

Incentive/Disincentive Mechanism – This update proposes 30% of the total allocation to this outcome, which would allocate a total of 60% to the SAIDI performance metrics and reflect higher priority to improve these measures of performance. In addition, this revision proposes to apply a linear scale to the penalty and incentive range based on 1 standard deviation in the 5-year average.

48-Hour Storm Restoration

Metric description – The revised proposal includes a performance metric for service restoration within 48 hours of a catastrophic event, which is consistent with feedback from utilities on addressing storm-related outcomes. Under this performance metric, utilities would be evaluated on the percentage of customers experiencing sustained outages that are restored power within 48 hours of a catastrophic event.⁴ MPSC service quality rules include a catastrophic conditions standard stating that 90% of customers must be restored within 48 hours.

Current performance – Table 1 shows current performance by both utilities and a proposal by DTE which assumes reaching 80% by 2024.

Target performance – Under the revised proposal, utilities would be penalized for performing below DTE’s proposal. DTE has proposed a baseline of 80% in 2024 and 1% improvement each year for 5 years. According to recent data, DTE’s performance has improved by 5%/yr. from 2021-2023, and this recent trend was used to establish the incentive threshold. To earn an incentive, utilities would need to surpass this annual improvement rate and then remain above the 90% established in current service quality rules.

Incentive/Disincentive Mechanism – This update also proposes a symmetric incentive/disincentive metric for this outcome for a maximum of 20% of the total incentive/penalty pool. The potential ranges are illustrated in Figure 5 and Table 5 provides the proposed values.

⁴ The pool of customers for this metric only includes customers that have endured a sustained outage as a result of the catastrophic event, which is a subset of total customers for each utility.

Worst-Performing Circuits

Metric description – The revised proposal focuses on SAIDI (excluding MEDs) to rank each utility’s 10 worst-performing circuits.

Current performance – Utilities currently provide this information to the MPSC in the Annual Power Quality Service Reports.

Target performance – For an initial discussion with the workgroup, target performance is that circuits do not repeat in the top 10 more than two times within the past 5 years. Through the next steps in this process, the workgroup is encouraged to provide further feedback on whether this metric should be measured on a system- or circuit-level.

Incentive/Disincentive Mechanism – Under this revised proposal, utilities would be assessed a penalty of 20% of the total pool if a circuit remained in the top 10 for 3 or more years within the past 5 years. Under the revised proposal, the penalties incurred for this metric would be assessed in aggregate.

Incentive/Disincentive Pool and Allocation to Metrics

The revised proposal presents a total incentive/disincentive pool based on limiting customer impact of incentives to \$10/customer annually. This valuation reflects a judgement on willingness-to-pay for improved utility performance on reliability and provides a consistent basis to scale across utilities. Based on the total customers for DTE and CE, the total incentive/disincentive pools would be \$23 million and \$19 million, respectively.

This update also proposes to allocate the total pool between performance metrics with a 60% allocation to the SAIDI metrics (split evenly at 30% each), 20% to 48-hour storm restoration, and 20% to worst-performing circuits. The SAIDI metrics and 48-hour storm restoration are proposed as symmetric incentives and worst-performing circuits as a penalty-only metric. The symmetric incentives only comprise 80% of the total incentive pool, which provides additional opportunity for the remaining metrics developed through this process.

Implementation Steps

This status update provides further description on the key implementation steps for this proceeding and subsequent review. The following steps are anticipated for implementing performance metrics:

- **Incentive/Disincentive metrics implemented through contested case proceeding** – This revised proposal anticipates that a contested case proceeding would follow this workgroup process. The final decision in the contested case would implement performance metrics for each utility.
- **Conduct a review every two years** - Given the early stage of experience with performance metrics in Michigan, the metrics should be reviewed on a frequent basis and this revision proposes a two-year review cycle.
- **“Offramp” mechanism should be included in framework** – This revised proposal also anticipates adopting an offramp mechanism to allow for review of performance metrics during exigent circumstances where waiting for the normal review period is impractical. The frequent (two-year) review cycle should mitigate many circumstances where an offramp may be considered but this revised proposed still recommends including an offramp mechanism during this stage.

- **Incentives/disincentives tracked in regulatory asset** – This update anticipates tracking the net value of incentive and disincentives annually in a regulatory asset, which is reviewed in the utility’s next rate case. Final decisions on cost allocation of the net value can be made in the rate case when the regulatory asset can be reviewed comprehensively with the utility’s revenue requirement and cost-of-service.
- **Next Reliability + Metrics can build on initial steps** – The opening order of this docket directed the workgroup to focus initially on reliability metrics and then broaden discussions to consider other important areas of distribution system performance, such as resilience and grid modernization. The workgroup will be taking up these topics during the next steps of this proceeding and building on the initial steps in establishing performance metrics for reliability.

Summary of Revisions to Initial Straw Proposal

Table 2: Summary of Proposed Revisions

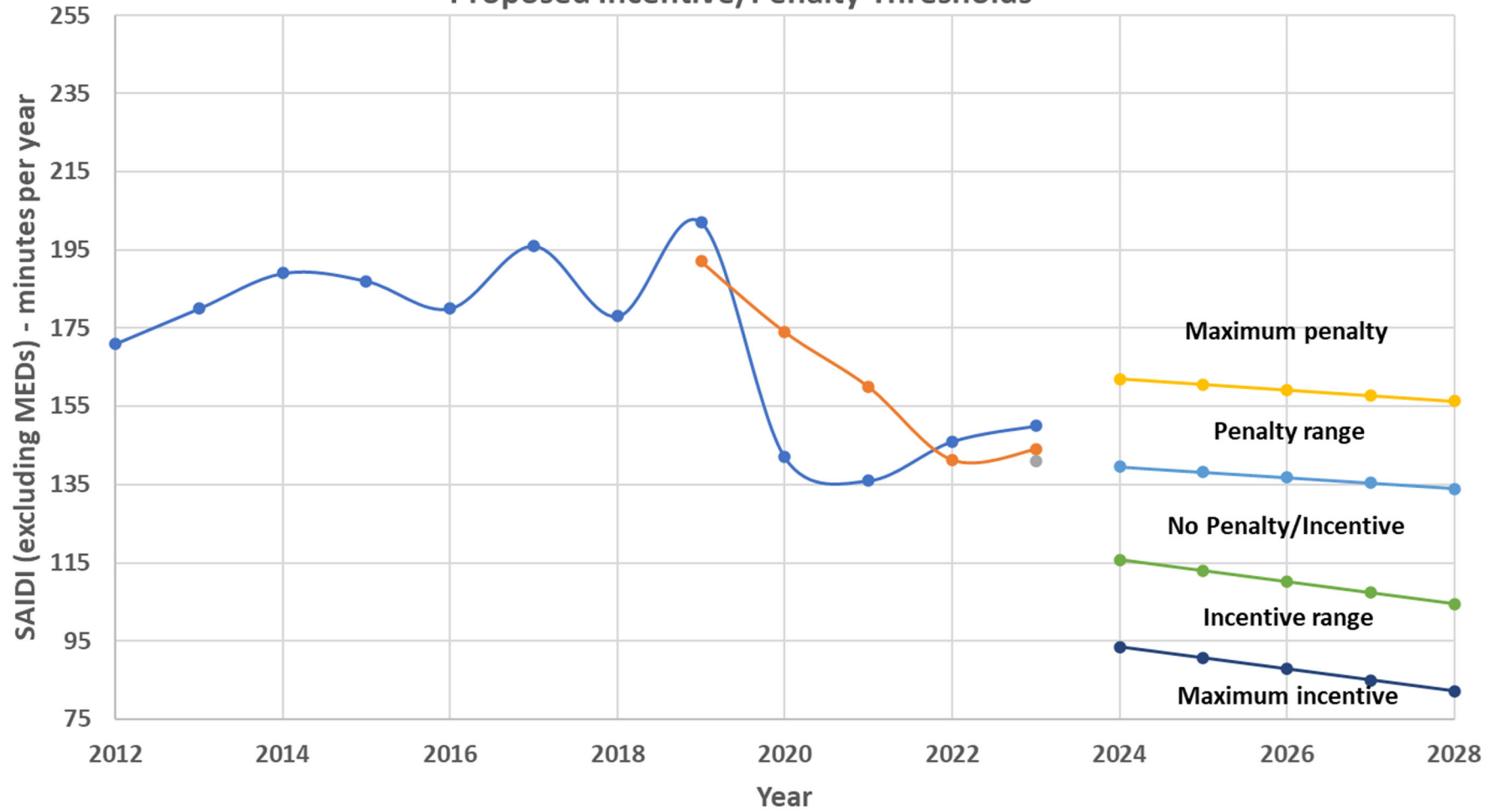
Key Revisions	Initial Proposal	Revised Proposal	Discussion
Modify outage duration metrics	Included CAIDI metrics and SAIFI	Focuses on SAIDI metrics and 48-hour storm response	Retain primary focus on outage duration under all conditions while addressing stakeholder feedback
Reduce complexity	Included metrics for CEMI ₄ , CEMI ₇ , and SAIFI	Excludes CEMI metrics and SAIFI with increased focus on outage duration/storm response	Reduce total number of metrics and retained explicit focus on outage duration/storm response; CEMI metrics included in Service Quality Rules
Allocate incentive/disincentive pool	Requested feedback on total pool	Establishes basis for total pool and allocates by metrics	Reflects high priority to improve reliability with urgency
Update penalty/incentive thresholds	Requested feedback on proposed near-term and long-term goals	Proposes improvement thresholds for penalties and incentives, including a deadband where appropriate	Update to thresholds provided for further feedback from stakeholders

Topic Areas for Feedback from Stakeholders

Stakeholder feedback on the revised proposal would be welcome in the following areas:

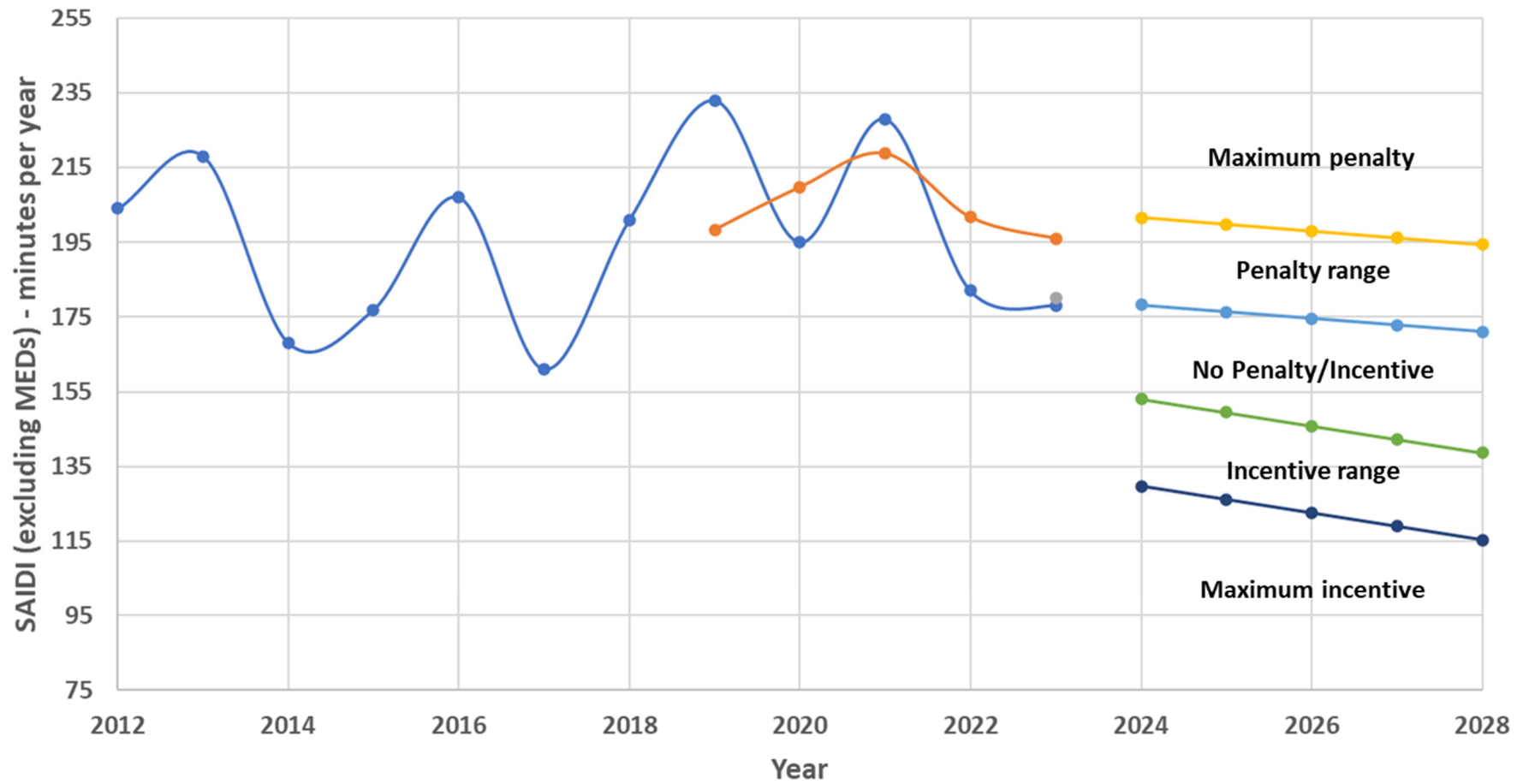
- Feedback on revised metrics
- Incentive/disincentive potential
 - Allocation by metric
 - Symmetric incentives for SAIDI and storm response metrics
- Focus area for worst performing circuit metric (system- vs. circuit-level)

Figure 1
DTE Historical Performance on SAIDI (excluding MEDS) and
Proposed Incentive/Penalty Thresholds



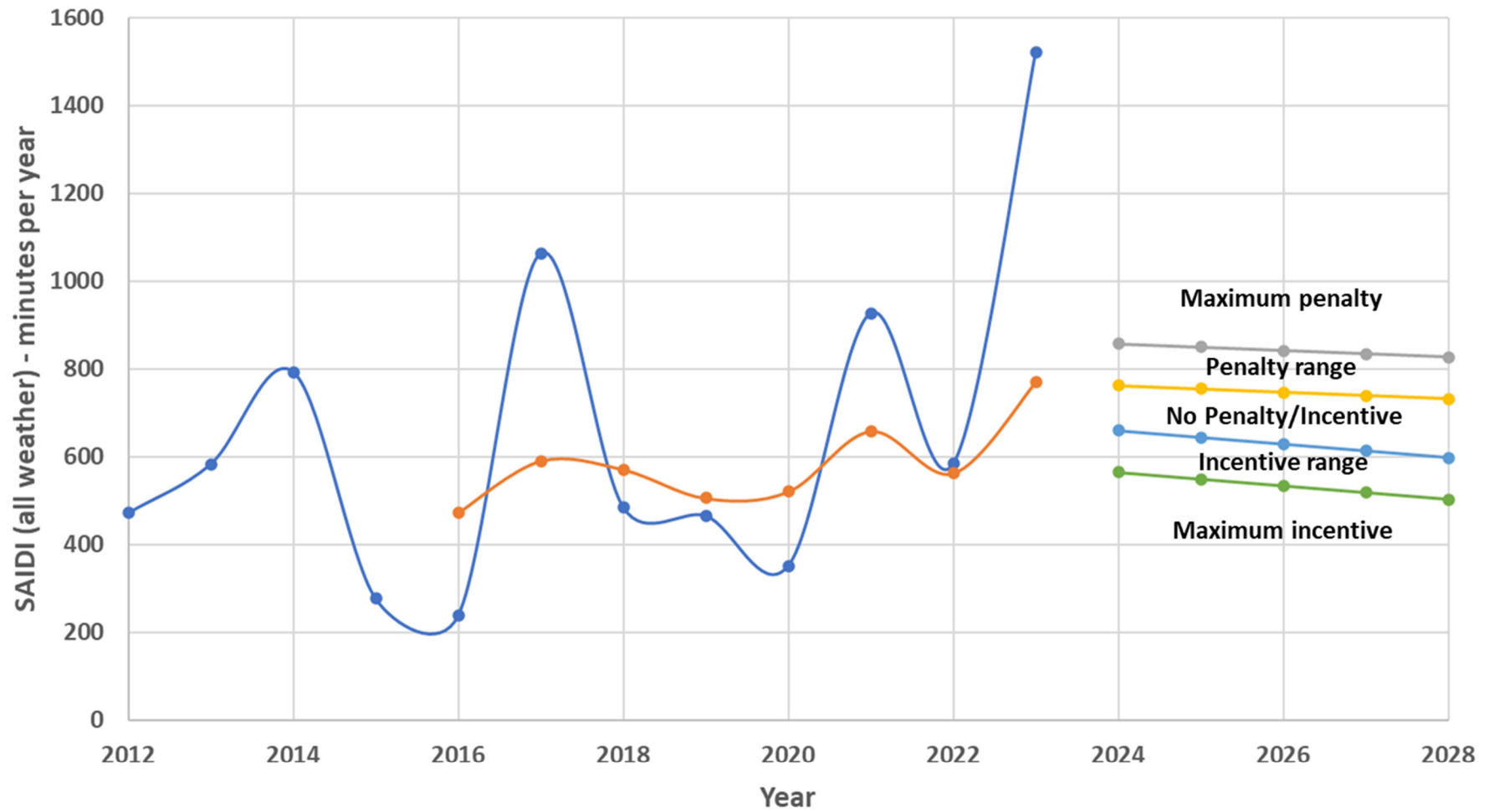
- Historical performance
- 3-Yr Average
- Avg. of min 2 years (2021-2023)
- Max Penalty threshold
- Penalty threshold
- Incentive threshold
- Max Incentive threshold

Figure 2
CE Historical Performance on SAIDI (excluding MEDS) and
Proposed Incentive/Penalty Thresholds



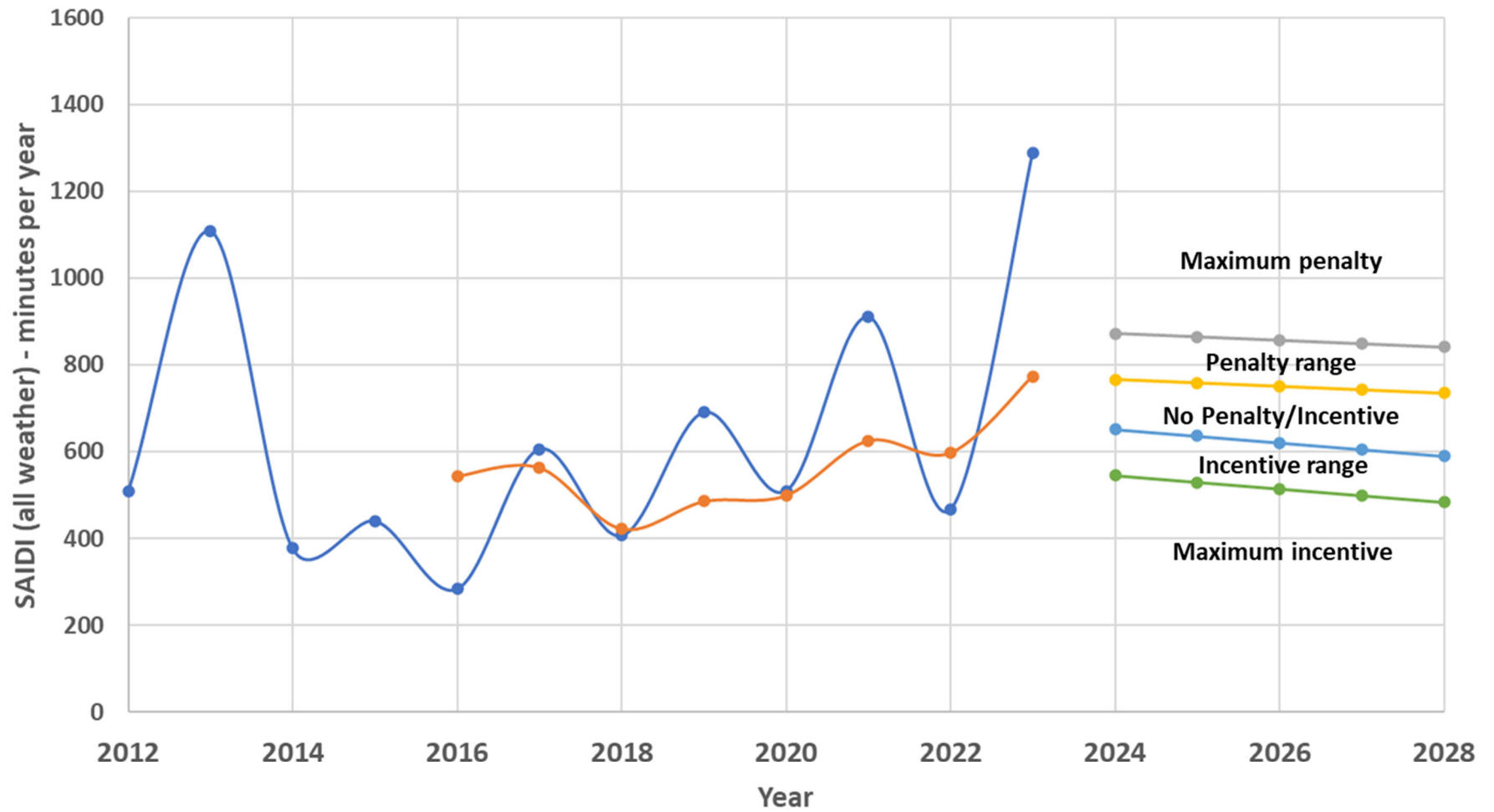
- Historical performance
- 3-Yr Average
- Avg. of min 2 years (2021-2023)
- Max Penalty threshold
- Penalty threshold
- Incentive threshold
- Max Incentive threshold

Figure 3
DTE Historical Performance on SAIDI (all weather) and
Proposed Incentive/Penalty Thresholds



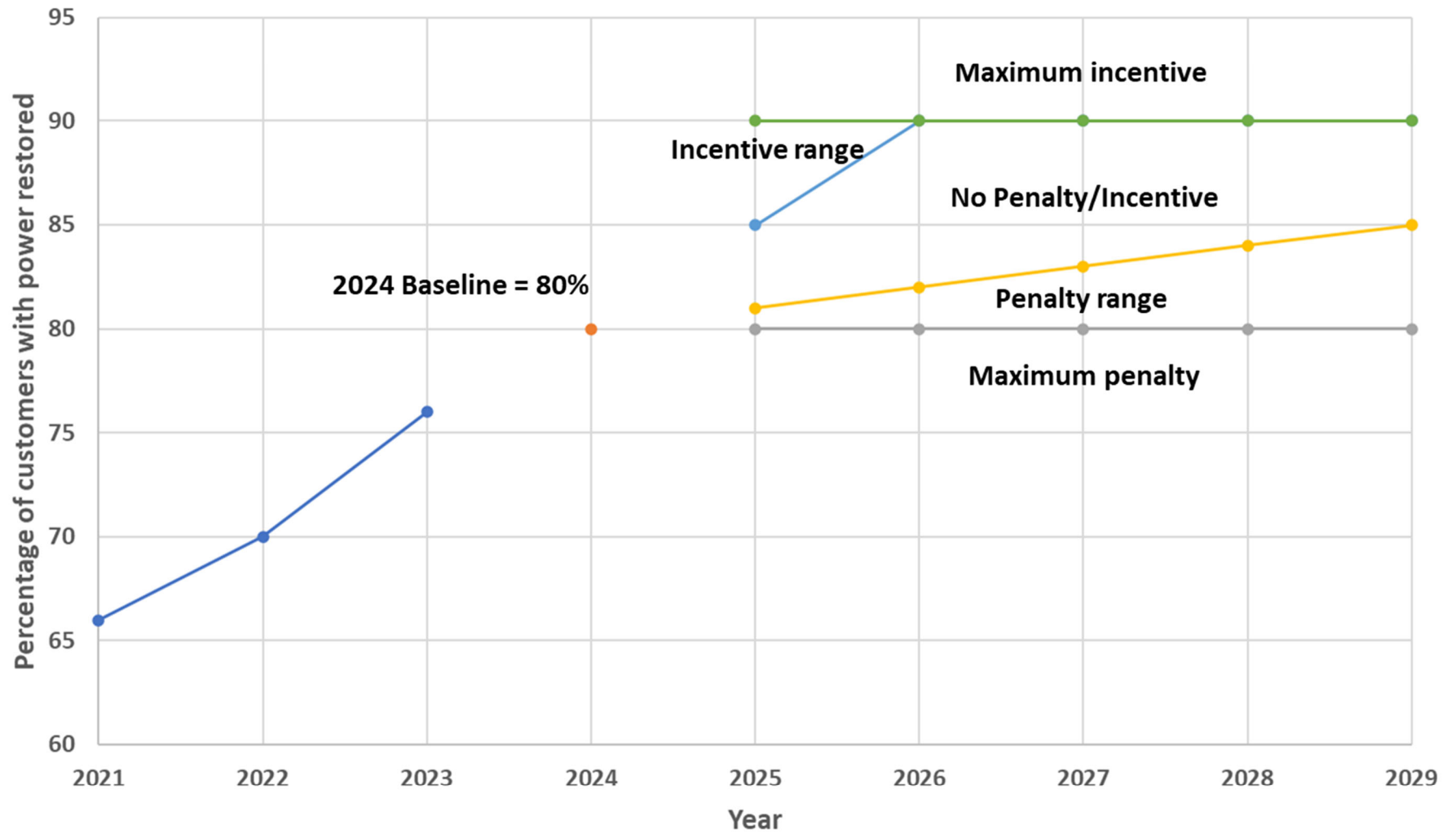
● Historical performance ● 5yr average ● Max Penalty threshold
● Penalty threshold ● Incentive threshold ● Max incentive threshold

Figure 4
CE Historical Performance on SAIDI (all weather) and
Proposed Incentive/Penalty Thresholds



● Historical performance ● 5yr average ● Max Penalty threshold
● Penalty threshold ● Incentive threshold ● Max incentive threshold

Figure 5
Proposed Incentive and Penalty Thresholds for 48 Hour Storm Response



- DTE Historical performance
- 2024 Baseline
- Max Penalty threshold
- Penalty threshold
- Incentive threshold
- Max Incentive threshold

Table 3 - System Average Interruption Duration Index (SAIDI excluding MEDs)

Definition		
Total amount of time average customer experiences a sustained interruption in a year excluding Major Event Days		
Key Considerations		
<ul style="list-style-type: none"> • Baseline uses avg. of lowest 2 yrs. from 2021-2023 to reflect recent improvements • Long-term goal at median performance in IEEE benchmarking study • Incentive/penalty scales linearly over 1 st. dev. range 		
Key Parameters	DTE	CE
Baseline (est. 2023)	141	180
5% Improvement Target	134	171
10% Improvement Target	127	162
Long-Term Goal	129	129
1 Standard Deviation (2012-2023)	22	23
Max Incentive/Penalty Allocation	30% (\$6.9 M)	30% (\$5.7 M)

DTE SAIDI (excl MEDs) Incentive/Penalty Mechanism

Year	Penalty	No Penalty/Incentive	Incentive
1	>162 – 140	140 – 116	116 – 93 >
2	>161 – 138	138 – 113	113 – 91 >
3	>159 – 137	137 – 110	110 – 88 >
4	>158 – 135	135 – 107	107 – 85 >
5	>156 – 134	134 – 105	105 – 82 >

CE SAIDI (excl MEDs) Incentive/Penalty Mechanism

Year	Penalty	No Penalty/Incentive	Incentive
1	>202 – 178	178 – 153	153 – 130 >
2	>200 – 176	176 – 149	149 – 126 >
3	>198 – 175	175 – 146	146 – 123 >
4	>196 – 173	173 – 142	142 – 119 >
5	>194 – 171	171 – 139	139 – 115 >

Table 4 - System Average Interruption Duration Index (SAIDI all weather)

Definition
Total amount of time average customer experiences a sustained interruption in a year under all weather conditions
Key Considerations
<ul style="list-style-type: none"> Metric uses 5-yr average of SAIDI (all weather) Baseline uses 5-yr historical average to reflect recent improvements Long-term goal at median performance in IEEE benchmarking study Incentive/penalty scales linearly over 1 st. dev. range Includes a 1 st. dev. deadband to address variability

Key Parameters	DTE	CE
Baseline 5-yr avg. (est. 2023)	770	773
5% Cumulative Improvement	39 mins	39 mins
10% Cumulative Improvement	77 mins	77 mins
Long-Term Goal	250	250
1 Standard Deviation 5-yr avg. (2016-2023)	95	106
Max Incentive/Penalty Allocation	30% (\$6.9 M)	30% (\$5.7 M)

DTE SAIDI (all weather) Incentive/Penalty Mechanism

Year	Penalty	No Penalty/Incentive	Incentive
1	>857 – 762	762 – 660	660 – 565 >
2	>850 – 755	755 – 644	644 – 549 >
3	>842 – 747	747 – 629	629 – 534 >
4	>834 – 739	739 – 613	613 – 518 >
5	>827 – 732	732 – 598	598 – 503 >

CE SAIDI (all weather) Incentive/Penalty Mechanism

Year	Penalty	No Penalty/Incentive	Incentive
1	>872 – 765	765 – 651	651 – 545 >
2	>864 – 758	758 – 636	636 – 530 >
3	>856 – 750	750 – 620	620 – 514 >
4	>849 – 742	742 – 605	605 – 499 >
5	>841 – 735	735 – 590	590 – 483 >

Table 5 - 48 Hour Storm Response

<p><u>Definition</u></p> <p>Percentage of customers restored within 48 hours of a catastrophic event</p>	<p><u>Key Parameters</u></p>	<p>DTE/CE</p>
<p><u>Key Considerations</u></p> <ul style="list-style-type: none"> • 2023 YTD for DTE and CE is 76% • Penalty threshold reflects DTE proposal • Incentive threshold accelerates compliance to 90% • Penalty linearly scaled from 80% • Incentive linearly scaled to 90% 	<p>2024 Baseline</p>	<p>80%</p>
	<p>Penalty Threshold</p>	<p>1%/yr</p>
	<p>Incentive Threshold</p>	<p>5%/yr</p>
	<p>Long-Term Goal</p>	<p>90+%</p>
	<p>Max Incentive/Penalty Allocation</p>	<p>20%</p> <p>(DTE - \$4.6 M, CE - \$3.8 M)</p>

DTE and CE 48 Hour Storm Response Incentive/Penalty Mechanism

Year	Penalty	No Penalty/Incentive	Incentive
1	< 81%	81% - 85%	> 85%
2	< 82%	82% - 90%	> 90%
3	< 83%	83% - 90%	> 90%
4	< 84%	84% - 90%	> 90%
5	<85%	85% - 90%	> 90%

Appendix 1 – Summary of Proposed Reliability Metrics

Metric	Baseline	Target Performance			Potential Incentive/Disincentive Mechanism
		Penalty Threshold	Incentive Threshold	Long-Term Goal	
SAIDI (Excluding MEDs)	Average of lowest 2 years from 2021-2023	SAIDI > 5% reduction from baseline over 5 years (linear glidepath)	1 st. dev. deadband + SAIDI < 10% reduction from baseline over 5 years (linear glidepath)	129 (2022 5-yr historical average of Industry median in 5 years)	Symmetric incentive/disincentive Max incentive/penalty scales linearly over 1 SD range 30% of incentive/disincentive pool
	DTE(2023) ¹ :141				
	CE (2023): 180				
SAIDI (All weather) (5-yr average)	5-yr historical average	SAIDI > 5% reduction from baseline over 5 years (linear glidepath)	1 st. dev. deadband + SAIDI < 10% reduction from baseline over 5 years (linear glidepath)	250 (2nd/3rd quartile) 5yr-average value = 375	Symmetric incentive/disincentive Max incentive/penalty scales linearly over 1 SD range 30% of incentive/disincentive pool
	DTE (2022): 563				
	DTE(2023 YTD) ² : 770				
	CE (2022): 597				
	CE(2023 est.) ³ : 773				
Storm Restoration (48-hour storm response)	80% by 2024	1% improvement/yr. from baseline over 5 years	Exceed recent improvement trend (5%/yr.) from baseline to 90%	Early compliance with 90% standard	Symmetric incentive/disincentive Account for 20% of incentive/disincentive pool Incentive scaled from threshold to 90% Penalty scaled from threshold to 80%
	DTE and CE report 76% YTD in 2023				
	Recent trend: 5% improvement/yr.				
Worst performing circuits	Reviewing historical top 10 rankings	Circuits ranked by SAIDI (exc MEDs)	N/A	N/A	Penalty only but not bill credit Seeking feedback on system- or circuit-level metric Account for 20% of disincentive pool
		No circuits remain in top 10 for more than 2 of past 5 years			

Draft Performance-Based Regulatory Framework

Straw Proposal for Reliability Metrics

Background

On April 24, 2023, the Michigan Public Service Commission (“MPSC” or “Commission”) issued the opening order in Case No. U-21400 (April 24 order), which directed Commission Staff to convene a Financial Incentives and Disincentives workgroup as part of the MI Power Grid Initiative and file a report of the workgroup’s investigations and findings by December 31, 2023.

In directing this action, the Commission referred to numerous prior decisions to address distribution system reliability and safety. The opening order also stated, “an initial focus of the Financial Incentives and Disincentives workgroup shall include developing appropriate metrics relating to reliability including, but not limited to, SAIDI [System Average Interruption Duration Index] (including and excluding MEDs [major event days]), SAIFI [System Average Interruption Frequency Index], CEMI [Customers Experiencing Multiple Interruptions], CAIDI [Customer Average Interruption Duration Index], and resilience, including, but not limited to, downed wire response and the frequency and duration of outages during extreme weather, and shall use the recently updated Service Quality rules as a baseline.”¹

Purpose of this Document

The Commission presents this straw proposal to foster discussion on distribution system reliability metrics and incentive/disincentive mechanisms that can track and encourage reliability improvements. The proposal was developed by reviewing prior Commission decisions, annual filings to the MPSC, and recent filings on distribution system plans. The concepts put forward in this document reflect a starting point for discussion among workgroup participants and not a final decision of the MPSC.

This remaining sections in this document:

- Discuss high-level observations on the current state of distribution system reliability in Michigan;
- Propose candidate performance metrics for further discussion by workgroup; and
- Present a straw proposal for performance targets and² incentive/ disincentive mechanisms to address distribution system reliability.

Observations on the Current State of Distribution System Reliability

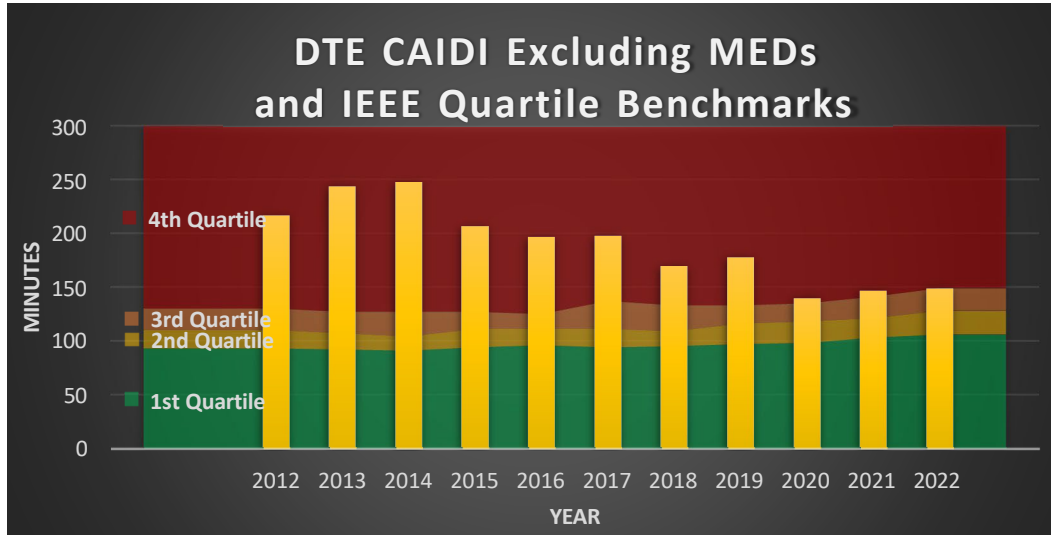
Michigan Customers Experience High Outage Duration

¹ See April 24 order at p. 12. For reference, SAIDI, SAIFI, CEMI, and CAIDI are electric utility reliability metrics defined by the Institute of Electrical and Electronics Engineers (“IEEE”).

² The Commission has initially focused on DTE and Consumers Energy in this straw proposal and expects to discuss applicability to other utilities with the workgroup members.

The MPSC currently collects utility service quality data through annual reports by utilities and presents this information on the Commission’s website.³ Two measures of outage duration (SAIDI and CAIDI) show that DTE and Consumers have ranged in the 3rd/4th quartiles for past 10 years when excluding MEDs. The graph below is available on the MPSC website and presents historical data for CAIDI.

Figure 1 – Comparison of DTE CAIDI to Industry Benchmarks from 2012-2022



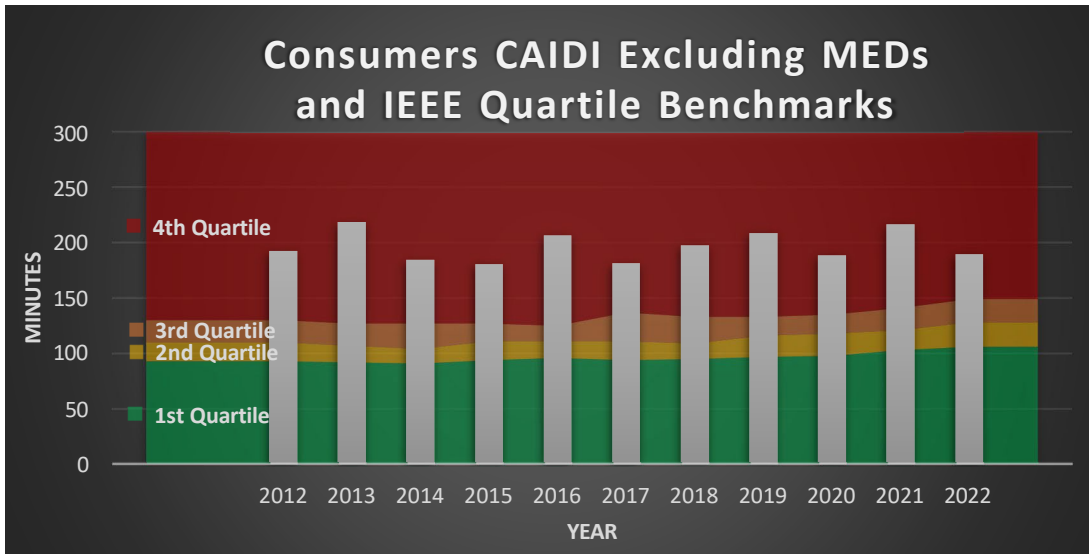
Note: Metric information presented excludes Major Event Days (MEDs)

The figure compares DTE’s CAIDI, which measures the average time to restore service to a customer after a sustained interruption,⁴ to industry benchmarks developed by an annual survey performed by the IEEE. The figure shows that DTE’s performance has improved in recent years but remains in the 4th quartile throughout the 10-year period.

³ See reliability metric information here: <https://www.michigan.gov/mpsc/consumer/electricity/distribution-system-reliability-metrics>.

⁴ According to the IEEE definition, a sustained interruption lasts over five (5) minutes.

Figure 2 – Comparison of Consumers Energy CAIDI to Industry Benchmarks from 2012-2022



Note: Metric information presented excludes Major Event Days (MEDs)

Figure 2 shows the same metric and comparison to industry benchmarks for Consumers Energy. The reported data show that Consumers Energy performance on CAIDI has remained in the 4th quartile during the entire period.

The MPSC website also displays similar comparisons for SAIDI, which is another common metric to measure outage duration. In reviewing these data, DTE and Consumers have generally performed in the 3rd and 4th quartiles compared to other utilities.

In contrast to outage duration, SAIFI show that DTE and Consumers Energy have consistently performed in the 1st and 2nd quartiles compared to other utilities. When including interruptions from MEDs, SAIFI increases moderately but not as significantly as duration metrics, which are discussed below.⁵

Increase in Outage Duration from Storm Events is Considerably Greater than Industry Benchmarks

The utilities’ reliability metrics are reported including and excluding “MEDs.”⁶ Understandably, utility reliability metrics increase (higher levels of interruptions and outage duration) when including all weather events. Traditionally, MEDs are excluded from utility performance evaluations because these events are weather-driven and not fully in control of utility actions.

In reviewing Michigan’s outage duration metrics, the relative increase from storms or “all weather” events is much greater than industry benchmarks. Looking at the difference between CAIDI (all weather) and CAIDI (excluding MEDs) isolates the reliability impact of MEDs. In reviewing the differences in these reliability metrics reported over the past decade, the following is observed:

⁵ See reliability information reported on the MPSC website - <https://www.michigan.gov/mpsc/consumer/electricity/distribution-system-reliability-metrics>.

⁶ IEEE standard 1366-2012 recommends a statistical method to determine Major Event Days for reliability indices (“2.5 Beta Method”).

- For Consumers and DTE, CAIDI (all weather) has averaged over 100% CAIDI (excluding MEDs) for the past decade;
- The median values for the industry benchmark have averaged just over a 40% increase in CAIDI from MEDs; and
- Both utilities are in the 4th quartile for the relative increase in CAIDI from major events/storms.

The impact of storm events on reliability and “all weather” metrics are important measures because they best reflect customers’ experience under all conditions and poor reliability performance during storm events can overshadow improvements in other measures. The straw proposal presented in this framework document proposes to track reliability performance separately during major events and the traditional measure excluding these events. The combined measures still gauge overall reliability performance while addressing the different circumstances and options available to utilities during these diverse weather conditions.

Certain Customers and Locations Experience Repeated and Lengthy Outages

Michigan utilities also report on reliability metrics that reflect more localized reliability performance. These metrics include CEMI_n (Customers Experiencing Multiple Interruptions of n or more), CELID (Customers Experiencing Long Interruption Durations), and 10 worst performing circuits in service territory. In reviewing this information, the MPSC makes the following observations:

- Data reported by utilities show over 16,000 (DTE) and close to 20,000 customers (Consumers) experiencing over 7 outages a year (CEMI₇ metric);
- Both utilities also report the worst performing circuits but use multiple metrics, which highlight diverse reliability challenges;
- DTE ranked worst circuits using SAIDI and SAIFI on a system- and circuit-basis;
- System-level basis generally highlighted long circuits where outages affect large number of customers;
- Circuit-level basis generally highlighted shorter circuits with very high interruptions and outage duration; and
- Consumers ranked circuits based on circuit-level SAIDI excluding MEDs.

As stated in prior orders, the Commission remains concerned that Michigan utilities continue to perform in the 4th quartile on key reliability metrics, particularly outage duration. Furthermore, certain customers experience worse service reliability than the system-wide measures indicate. This proposal identifies candidate metrics and potential performance targets to improve reliability. In addition, where feasible and applicable, the document outlines proposed incentive/disincentive mechanisms for review and feedback from the workgroup.

Candidate Reliability Performance Metrics

The Commission has reviewed recent filings and identified several candidate performance metrics based on persistent concerns with reliability of utility distribution systems. The initial candidate metrics include the following areas:

- CAIDI (all weather), CAIDI (excluding MEDs), and CAIDI (only MEDs);

- SAIFI (all weather) and SAIFI (excluding MEDs);
- CEMI₄ and CEMI₇; and
- Worst performing circuits ranked by circuit-level SAIDI.

CAIDI metrics - The Commission prioritizes these metrics because outage duration in Michigan remains high relative to industry benchmarks, and CAIDI provides a meaningful and intuitive measure of customer experience (average time to restore customer's power after an interruption). The MPSC still intends to monitor other reliability metrics, but the Commission identifies developing targets and incentive/disincentive mechanism(s) for CAIDI as a priority for further discussion among stakeholders.

SAIFI metrics – Outage frequency is another important measure of customer experience, and the Commission expects SAIFI to improve as utilities invest in their distribution systems. Therefore, the Commission identifies SAIFI as a candidate performance metric for discussion with stakeholders in this workgroup.

CEMI - The MPSC has identified CEMI as a candidate metric to address the subset of customers that experience more frequent interruptions than the system average metrics indicate. Furthermore, the Commission has already established CEMI₄ as a metric for service quality standards. The Commission is interested in discussing with the workgroup how a performance target and incentive/disincentive mechanism for CEMI metrics can prompt further actions to improve reliability for customers currently experiencing high levels of interruptions.

Worst performing circuits - In the Annual Power Quality Reports, utilities currently detail their 10 worst performing circuits. The Commission identifies circuit-level reliability performance as another candidate metric to establish performance targets and potential incentive/disincentive mechanisms to address areas with persistent reliability problems.

This section briefly summarized the candidate metrics and basis for selection. Below, the Commission outlines a conceptual straw proposal on performance targets and potential incentive/disincentive mechanisms for these metrics.

Straw Proposal on Performance Targets and Incentive/Disincentive Mechanisms

Table 1 summarizes the proposed metrics, current performance for Michigan’s two largest utilities, potential target levels for each metric, and incentive/disincentive mechanism for consideration by the workgroup.

Table 1: Straw Proposal for Candidate Performance Metrics

Metric	2022 Performance		Target Performance		Potential Incentive/Disincentive Mechanism
	DTE	Consumers	Interim	Long-Term	
CAIDI (Excluding MEDs, in minutes)	149 (2022 value)	189 (2022 value)	Stakeholder feedback; informed by DSP	118 (Median, 5-yr avg.)	Symmetric incentive/disincentive
CAIDI (Only MEDs)	298 (5-yr. average)	235 (5-yr. average)	135 (3rd/4th quartile, 5-yr average)	62 (2nd/3rd quartile, 5-yr average)	Symmetric incentive/disincentive
SAIFI (Excluding MEDs)	0.98	0.96	Stakeholder feedback; informed by DSP	0.86 (1 st /2 nd quartile, 5-yr average)	Symmetric incentive/disincentive
CEM ₄ (Customer count)	163,417	173,273	TBD	<5% of customers by 2030	Penalty
CEM ₇ (Customer count)	16,262	19,821	TBD	Industry benchmark	Penalty
Worst performing circuits	Reports use multiple metrics	Reports by Circuit-level SAIDI (no MEDs)	No circuits remain on list for more than 2 of past 5 years	No circuits remain on list for more than 2 of past 5 years	Penalty

In this proposal, the CAIDI all-weather metric is divided into the traditional measure of CAIDI (excluding MEDs) and a separate CAIDI metric including only MEDs. This split collectively measures performance under all weather conditions but allows different benchmarks and incentive mechanisms for each component. This separation helps manage the higher uncertainty in the measure including only MEDs. A more detailed description of the straw proposal by each metric follows below.

CAIDI (excluding MEDs)

Metric description – Under this proposal, one component of measuring outage response includes the traditional measure of reporting CAIDI excluding MEDs. The utilities currently report this information to

the MPSC and the annual value would be assessed relative to a trajectory of target performance that includes stakeholder feedback in this process and informed by each utility's distribution system plan (DSP).

Current performance – The table shows that the 2022 annual values for DTE and Consumers were 149 and 189 minutes, respectively. For both utilities, these CAIDI values are in the 4th quartile according to the 2022 IEEE utility benchmarking study.

Target performance – The interim targets should be informed by the 2021 and 2023 distribution system plans. This proposal presents the median industry benchmark as a long-term target. Using current IEEE information, the median value was 118 minutes. The Commission presents these benchmarks for further discussion and feedback from stakeholders in the workgroup.

Incentive/Disincentive Mechanism – For this metric, the Commission is considering utilizing the symmetric incentive design proposed by the utilities in the 2021 DSPs. The target improvement trajectory would be set by the Commission and informed by analysis on expected system improvements in the DSP. The mechanism would utilize a deadband around the target before an incentive or penalty would be triggered. Consistent with the earlier proposals, the Commission suggests a symmetric deadband around the target based on one standard deviation using historical performance.

CAIDI (only MEDs)

Metric description – Under this approach, the Commission would adopt the 5-yr. rolling average of CAIDI measured only during MEDs, where CAIDI (only MEDs) is calculated using the duration of only MEDs, and excludes non-MEDs. The intention is to measure the average impact of major events on outage duration and improve this response over time.

Current performance – The table shows current performance by both utilities, which is in the 4th quartile of the IEEE utility benchmarking study.

Target performance – Table 1 shows two potential targets based on utility benchmarks for median performance (62 mins) and 3rd/4th quartile threshold (135 mins). Under either benchmark, utility performance is still far above the thresholds (higher values are worse performance). Therefore, interim values for this metric will require further discussion by the workgroup and should be informed by improvement plans in the next DSPs.

Incentive/Disincentive Mechanism – This straw proposal presents CAIDI (only MEDs) as a symmetric mechanism. While there is an understanding that storm events are not under utility control, data show these events are becoming more frequent and severe. Furthermore, utility investments to prepare for these events and response during the events are under the utility's purview. The disparity in reliability outcomes between storm events and normal conditions for major Michigan utilities is significant and this outcome needs greater focus and attention. By bifurcating the measurement and incentive mechanisms for non-MED and MED events, the proposal attempts to address both overall CAIDI and the experience of customers during major storm events. The Commission understands this is potentially a novel measure for Michigan's utilities, and the industry generally. Therefore, the Commission expects to monitor how this metric works in practice as it connects the metric to financial measures.

SAIFI (excluding MEDs)

Metric description – This proposal includes SAIFI (excluding MEDs) as a performance metric. While SAIFI also increases during major events, the change is not as significant. Furthermore, the current basis of information to set targets and incentive/disincentive mechanism is stronger for SAIFI without MEDs. Therefore, this proposal presents this metric as a starting point for discussion on interruption frequency.

Current performance – The table shows current performance by both utilities, which is in the 2nd quartile using the IEEE utility benchmarking study.

Target performance – Interim target values would be established by the Commission and informed by analysis of SAIFI improvements in the next distribution system plans. The long-term target represents the threshold of 1st/2nd quartiles and 5-yr average of IEEE benchmarking data.

Incentive/Disincentive Mechanism – This performance metric would have a similar symmetric incentive mechanism as CAIDI (excluding MEDs).

CEMI₄

Metric description – This metric measures the number of customers that experience four or more sustained interruptions. The current service quality rules state that:

- From the effective date of these rules until December 31, 2029, considering data derived through the amalgamation of data from all conditions, not more than 6% of an electric utility's or cooperative's customers may experience 4 or more sustained interruptions in a calendar year.
- Beginning January 1, 2030, considering data derived through the amalgamation of data from all conditions, not more than 5% of an electric utility's or cooperative's customers may experience 4 or more sustained interruptions in a calendar year.

Current performance – Utilities currently report this information to the MPSC in the Annual Power Quality Service Reports. In 2022, DTE had 163,417 customers and Consumers had 173,273 with CEMI₄.

Target performance – The Commission would like the workgroup to discuss an interim target for this metric because current distribution system plans have not analyzed projected improvements for CEMI₄. As a long-term goal, the service quality rules already establish a target of <5% of customers by 2030.

Incentive/Disincentive Mechanism – This straw proposal presents this mechanism as a penalty only for customers experiencing this level of interruption, which could be set as a bill credit for customers.

CEMI₇

Metric description – This metric measures the number of customers that experience seven or more sustained interruptions. The Commission is interested in addressing customers that experience a high number of interruptions each year and identified an initial threshold of 7 outages for further review and discussion with the workgroup.

Current performance – Utilities currently report this information to the MPSC in the Annual Power Quality Service Reports. In 2022, DTE had 16,262 customers and Consumers had 19,821 with CEMI₇.

Target performance – The Commission would like the workgroup to discuss interim and long-term targets for this metric because current distribution system plans have not analyzed impacts for CEMI.

Incentive/Disincentive Mechanism – This straw proposal presents a penalty-only mechanism for customers experiencing this level of interruption, which could be set as a bill credit for customers.

Worst-Performing Circuits

Metric description – The Commission proposes to focus on circuit-level SAIDI (excluding MEDs) to rank each utility's 10 worst-performing circuits. Each utility current reports this information.

Current performance – Utilities currently provide this information to the MPSC in the Annual Power Quality Service Reports.

Target performance – For an initial discussion with the working group, the target performance is that circuits do not rank in the top 10 for more than 2 years within the past 5 years.

Incentive/Disincentive Mechanism – Under this conceptual proposal, utilities would be penalized if a circuit ranked in the top 10 for 3 or more years within the past 5 years. This penalty could be assessed as a bill credit to customers on the affected circuits.