



May 3, 2024

Massachusetts Department of Energy Resources  
Attn: Samantha Meserve  
100 Cambridge Street, 9th Floor,  
Boston, MA 02114

## **RE: SYSO's 2024 CPS Review Comments**

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### **Introduction**

SYSO Technologies ("SYSO") is pleased to submit these comments in response to Massachusetts's Department of Energy Resource's ("DOER") request for feedback regarding the Clean Peak Energy Standard ("CPS") under 225 C.M.R 21.00. We believe that the CPS is an essential part of Massachusetts's path to meeting the targets in the Global Warming Solutions Act ("GWSA") and, based on our experience registering and operating assets participating in the program, we believe that there are several improvements that can be made to the program that will ensure that program achieves these goals.

SYSO is a Massachusetts based asset manager working with distributed- and transmission-scale standalone and co-located storage across the country, with over 2 GW of assets under contract. As an ISO-NE Lead Market Participant ("LMP") and Designated Entity ("DE"), SYSO manages the day-to-day operations for clients, ensuring assets run at an optimal state, maximizing renewable energy generation, and optimizing performance across a variety of wholesale and retail programs. Over the past three Forward Capacity Auctions ("FCAs") in ISO-NE, SYSO has cleared more new generation resources than any other LMP, comprised entirely of solar or storage. Additionally, SYSO manages asset participation in several Massachusetts programs, including CPS, SMART and ConnectedSolutions.

While we have seen great success in the SMART and ConnectedSolutions programs, we have not seen the same interest in the CPS program from standalone storage projects or from projects co-participating with other Massachusetts programs. The CPS has the potential for creating a market for storage in Massachusetts, but under today's regulations, the market has not been viable. To stimulate this market and mirror the success of Massachusetts other programs, SYSO recommends the following improvements to the regulations:

- **Strengthen price signals and provide market certainty** by increasing the Alternative Compliance Payment ("ACP") rate, eliminating the year-over-year ACP rate reductions, and establishing a clear and transparent mechanism for securing long-term agreements for selling Clean Peak Energy Credits ("CPECs") (see responses to Questions 3, 8, and 9)
- **Support distribution-connected projects** by creating tiered CPEC products and adjusting the Minimum Standard (see responses to Questions 5 and 9)
- **Balance co-participation options to attract longer duration storage** for projects participating in late-stage SMART blocks by adjusting the SMART multiplier (see response to Question 10)



- **Ensure performance during monthly peak periods** by modifying the Monthly System Peak Multiplier to address forecast uncertainty and ISO-NE data availability (see response to Question 8)
- **Facilitate program access** by addressing administrative barriers with the registration, the Production Tracking System (“PTS”), and Statement of Qualification Application (“SQA”) processes (see response to Question 6)
- **Target periods with the highest environmental impact** by creating a new multiplier based on actual periods with highest and lowest marginal emissions (see response to Question 1)

By implementing these recommendations, DOER can create stronger price signals and mitigate uncertainty that exists in the program today, which will attract new development and ensure assets are delivering the most benefit to consumers.

We provide further details for each of these recommendations in the section below in response to a select number of questions posed by DOER but would be pleased to discuss these responses directly with DOER. Please do not hesitate to reach out to [dmatheson@syso.com](mailto:dmatheson@syso.com).

Sincerely,

Douglas Matheson

Director of Energy Markets

SYSO Inc.



## Responses

### 1. How could the Clean Peak Energy Standard (“CPS”) Program be improved to better contribute to achievement of the 2050 GWSA mandates? Please include details and any supporting data and analyses.

Under the CPS program today, a resource has four options for demonstrating that the operation of the facility is primarily to store and discharge renewable energy, including co-location with a qualified RPS resource, an interconnection agreement with a schedule that resolves concerns associated with renewable energy, and set charging hours and discharging hours. SYSO has no concerns with these requirements and believes that they provide an appropriate mechanism to generally ensure that resources are shifting renewable energy to peak load hours, when emissions are typically the highest, helping the Commonwealth meet its 2050 GWSA mandates.

However, with the appropriate data and incentives, storage resources can do better than proxy dispatch windows. While it would take some retooling and model training, storage asset operators already have sophisticated forecasting tools which could be used to predict peak emissions as well. Using these tools, storage assets will be able to specifically target charging in periods with the actual lowest marginal emissions and discharging in the periods with the actual highest marginal emissions. Dispatching storage resources based on the emissions rate of the marginal generating unit would guarantee that the CPS was contributing towards the 2050 GWSA goals and ensure that these resources continue to contribute towards these goals as the resource mix and peak emission periods change. While proxy dispatch windows will remain the best mechanism to attract investment to the program, DOER should also explore mechanisms which incentivize resources to develop the capability to concretely contribute to emission reduction goals. Therefore, SYSO recommends that DOER:

- **Short-term:** Implement an additional 10x Monthly Peak Emissions Multiplier that targets performance during the hour of the highest monthly total emissions, as published by ISO-NE
- **Short-term:** Encourage ISO-NE to publish the emissions rate from the marginal unit as part of their 2025 Work Plan
- **Long-term:** Replace the Monthly Peak Emission Multiplier with a 10x Monthly Peak Emissions Rate Multiplier that targets performance during the hour of the highest monthly marginal emissions to be published by ISO-NE

Given the data currently available, SYSO recommends that DOER immediately establish a 10x multiplier that targets performance during the hour of highest emissions for the month based on ISO-NE’s estimation of total CO<sub>2</sub> emissions which is published to their website in real time<sup>1</sup>. Like the Monthly System Peak Multiplier, a Monthly Peak Emissions Multiplier would modify the number of CPECs that a clean peak resource generates during the peak emissions hour, which may or may not correspond to the peak load hour. Under this design, clean peak resources

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<sup>1</sup> <https://www.iso-ne.com/isoexpress/>



would be incentivized to discharge clean energy during the dirtiest periods on the system, as measured by the periods of time which the system is emitting the most.

Ideally, in the long-term, this incentive would be based on providing energy in periods when storage discharge would create the largest change in emissions with the injection of the stored clean energy. The best measure of this change is the emissions rate of the marginal unit on the system. The marginal unit on the system is the resource that the system would call if the system needed additional energy, and if called, systems emissions would increase according to the emission rate of that unit. However, ISO-NE does not currently publish the marginal emissions rate, and it would take ISO-NE resources to develop this capability. SYSO recommends that DOER join stakeholders in asking ISO-NE to provide this data to the marketplace. ISO-NE is currently in the early stages of developing its workplan for 2025, and within this process there is an opportunity for stakeholders to provide feedback to ISO-NE on which projects they would like them to incorporate into the plan. ISO-NE should include this item in its workstream, and DOER should work with NESCOE and MA's NESCOE managers to get this item included.

Finally, when marginal emission rate data is available, the emissions-based multiplier should be determined by a clean peak resource's contribution during the hour which has the highest marginal emissions rate, instead of the hour with the highest total emissions. This multiplier would replace the multiplier based on total system emissions. As the resource mix and system changes, this multiplier will continue to incentivize clean peak resources to dynamically perform when they have the greatest impact on avoiding emissions, helping the Commonwealth meet its 2050 GWSA goals.

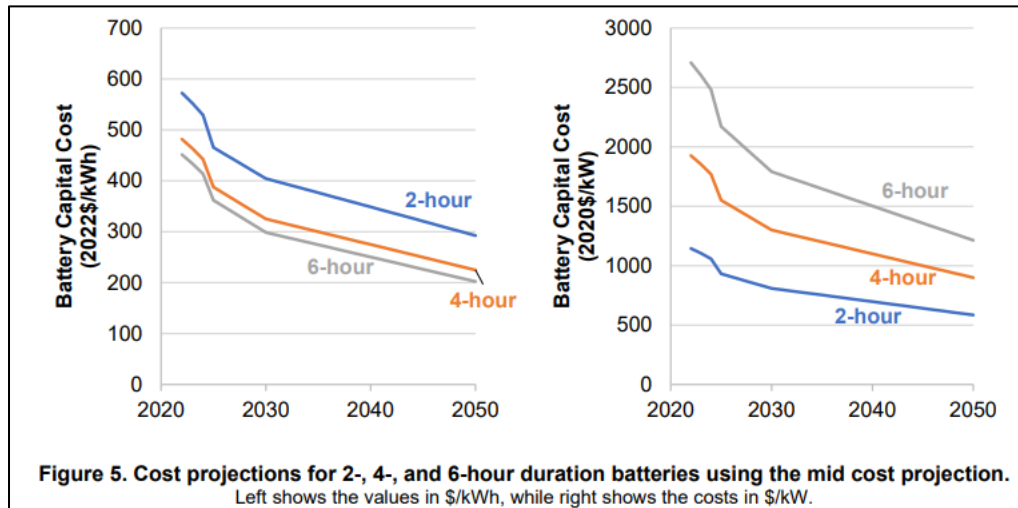
### **3. Has the CPS incentive had an impact on the decision of system owners to invest in CPS eligible technologies? Why or why not?**

While the CPS incentive provides a revenue opportunity for front-of-the-meter ("FTM") storage resources in Massachusetts that does not exist elsewhere in New England, the certainty and price signal in the market has not been strong enough to underwrite investing in standalone storage projects nor strong enough to encourage projects participating in other programs (e.g., SMART) to increase their storage duration beyond 2-hours. We discuss SYSO's recommended solutions to these issues in response to questions 5, 8, 9, and 10, but provide brief commentary here on project incentives.

Current program rules in both the SMART program and in ISO-NE's markets set a 2-hour minimum duration for energy storage resources. To date, many storage resources, particularly those co-located with renewable generators, are targeting that minimum duration, as that is the most cost-effective duration for qualifying for incentives and capturing spilled energy from renewable generators. Current battery energy storage technology costs scale significantly with MWh energy capability. That is, if a project doubles in duration, system costs measured in \$/MWh are not cut in half and system costs measured in \$/kW increase. This is shown on the figure below which comes from the National Renewable Energy Laboratory's "Cost Projections for Utility-Scale Battery Storage: 2023 Update" published in June of 2023. For revenues based on \$/kW (like capacity), if incentives don't scale with duration (like ISO-NE's capacity market



doesn't today) it will be more cost effective to install a shorter duration technology. Therefore, projects need to see additional incentives to increase their duration.



**Figure 1: From National Renewable Energy Laboratory's June 2023 report titled "Cost Projections for Utility-Scale Battery Storage: 2023 Update"<sup>2</sup>**

While the CPS creates an incentive for 4-hour durations, the marginal compensation from the CPS program for increasing duration of the energy storage facility from 2-hours to 4-hours is not sufficient to cover the associated costs. For example, a distributed renewable energy project would be willing to add a 2-hour storage asset (sized at 25% of the co-located PV asset) to increase its ISO-NE capacity market revenue up by approximately \$40/kW annually (by switching from an intermittent generator to an energy storage resource in the capacity market, which both increases its qualified capacity and extends the number of months in which it can provide that capacity), its SMART revenue by \$0.025/kWh of energy produced (by qualifying for the SMART storage adder), and CPS revenues by \$27/kWh of battery energy capacity annually (by qualifying for the program at with a derated storage facility), but be unable to justify doubling duration to 4 hours as this currently has no benefit to capacity market revenues, has little benefit on energy revenues, and provides only an additional \$0.0075/kWh to the SMART rates (a 30% increase) and an additional \$18/kWh in CPS revenues (a 70% increase). The CPS incentives need to be sufficient to invest in 4-hour technology, which underpins SYSO's recommendation for a higher ACP (to allow for price discovery for resources to recover the costs associated this investment), a procurement mechanism (to provide certainty to mitigate heavy discounts from underwriters), and separation of CPEC between transmission- and distribution-connected assets (to provide price stability for assets in each class).

**5. Are the CPS Resource eligibility criteria appropriate? If any criteria pose a barrier, please describe and provide recommended mitigation strategies.**

SYSO is concerned that the lack of differentiation in the CPS program between transmission- and distribution-connected projects will lead to significant price volatility as different classes of

<sup>2</sup> <https://www.nrel.gov/docs/fy23osti/85332.pdf>



assets enter the program and that the program will eventually only favor transmission-connected projects, despite the local reliability, efficiency, and reliance benefits that distribution-connected projects provide. Both transmission- and distribution-connected projects will continue to play an important role in meeting the Commonwealth's climate goals, and the CPS program is a critical part of developing both types of assets. Therefore, SYSO recommends that DOER differentiate transmission- and distribution-connected assets as part of the program design to ensure that both classes of assets continue to be developed.

There are over 12 GW of standalone and co-located storage projects larger than or equal to 100 MW seeking to interconnect in Massachusetts in ISO-NE's queue as of mid-April 2024<sup>3</sup>. Although only a fraction of these projects will likely come online, given the current Minimum Standard, SYSO believes that it would only take a couple of these larger projects to participate in the program to saturate the market and depress prices in a relatively short amount of time. This possibility causes investors to significantly discount expected revenues from the CPS program, since the timing and magnitude of these effects are unknown, particularly for distribution-connected generators. As a result, SYSO is concerned that this possibility is cooling distribution-connected interest in the program.

Distribution-connected projects can provide local environmental, resilience, and cost-saving benefits that transmission-connected projects are unable to provide. However, without a robust distribution system grid services program which compensates FTM distribution-connected projects for these benefits, SYSO fears that in the short-term distribution-connected projects will not be able to compete with the economies of scale of transmission-connected projects despite being able to provide additional value. The CPS program should seek to encourage projects that can provide the most value to consumers and therefore would be remiss to only select transmission-connected projects. Like the programs that Massachusetts has implemented so far, the Commonwealth should continue to support distribution-connected projects while a robust distribution-system grid service programs is developed to ensure that these resources are developed and available to the system today and in the future.

Therefore, SYSO recommends creating two "tiers" of project eligibility in the CPS program based on the applicable interconnection process and setting ACP rates and Minimum Standards applicable to each tier. Under this design, CPS resources could produce CPEC under one of two tiers, Tier 1 and Tier 2. Projects eligible for producing Tier 1 CPECs would need to interconnect to the distribution system and be studied under a utilities' interconnection procedures. Projects eligible for producing Tier 2 CPECs would be consistent with eligibility requirements today and include transmission-connected projects. The Minimum Standard would be set in a way such that a percentage of the total obligation for procuring CPECs would need to be met Tier 1 CPECs and the remaining obligation be met by Tier 1 or Tier 2 CPECs. As shown in the table below, SYSO recommends that at least 25% of the Minimum Standard be met by Tier 1 CPECs from projects connected to the distribution system. SYSO expects that prices for Tier 1 CPECs would separate from prices of Tier 2 CPECs, and therefore there may be a need to create separate ACP rate for each CPEC tier.

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<sup>3</sup> <https://irtt.iso-ne.com/reports/external>





**Table 1: Example of Tiered Minimum Standard**

	<b>Total Compliance Obligation under Minimum Standard</b>	<b>Tier 1 Compliance Obligation</b>	<b>Compliance Obligation met by Tier 1 or Tier 2 CPECs</b>
<b>Percentage of Total Obligation</b>	100%	25%	75%
<b>Minimum Standard (% of retail sales)</b>	7.5%	1.875%	5.625%

This design would give sellers of Tier 1 CPECs greater confidence in the stability of CPEC prices and ensure that CPEC prices do not fall below a competitive level for distribution-connected projects. Meanwhile, transmission-connected projects which currently benefit from economies of scale and access to additional market opportunities would still likely control the price of the majority of CPECs procured under the program. Distribution-connected projects could still meet total CPEC needs if there was not a sufficient supply of Tier 2 CPECs or Tier 1 CPECs were more competitive. Without differentiating the CPEC product, in the long run Massachusetts will likely see far fewer distribution-connected projects than they would otherwise.

**6. Are CPS application processes and requirements clear? Is communication between applicants, the CPS Program Administrator, and DOER clear and effective? Please describe any improvements you believe could be made to the CPS application process.**

Given our experience registering assets in the CPS program, SYSO recommends making the following three changes to administration of the program that would facilitate access and streamline the process before more projects join the program:

- **Create a formal, logged communication process between the CPS administrator and applicants** – There is currently no email-to-case system visible to applicants for tracking inquiries with the CPS administrator. All communication is handled solely by email. This results in confusion and delays as there is not a way to refer to specific requests. Applicants would benefit from a system that would allow them to easily check on the status of inquiries and reference past inquiries. On the administrator's side, this system would also help facilitate delineation of tasks and responses between the program administrators and their consultants, as well as create a process for prioritizing requests that have come in from various parties.
- **Update the Production Tracking System (PTS) to specifically accommodate CPECs** – The PTS was designed for REC programs, and while it can be used track CPECs, because of the difference in characteristics between CPS resources and RPS resources, the system does not fully align with the information required for generating CPECs. This misalignment creates friction in the registration process and has required



manual intervention of the program administrator. The PTS system should be updated with functionality specifically designed for the CPS program to minimize back-and-forth between the applicant and the program administrators.

- **Permit projects to apply for a Statements of Qualification under the SMART and CPS program in parallel** – Currently qualified energy storage systems that are coupled with SMART assets can only submit their Statement of Qualification Applications for the CPS after DOER issues a Final Statement of Qualification in the SMART program. Following SMART approval, DOER (not the project owner) uploads the SMART system information to MassCEC PTS and does not notify the project owner when they have done so. There is no mechanism for proactive notification or general search functionality in PTS to identify when the system is available in the PTS. The CPS applicant therefore must reach out to DOER to confirm the PTS ID, In Service Date, PTS System Owner Last Name, System Size, and City of the SMART asset in order to locate it in PTS. If any of these fields are missing or do not match the DOER's uploaded information, PTS cannot locate the system. In our experience, this convoluted process can result in up to an 8-week delay between the system being commercially operational and when it is approved for CPEC production. To simplify and expedite CPEC generation, SYSO recommends creating a process by which a project can submit applications for Final Statements of Qualification for SMART and CPS in parallel with one another. Under this design, the project owner would be responsible for uploading all information into the PTS and would only be required to enter the SMART ID listed in the Preliminary Statement of Qualification for the SMART program. Meanwhile, DOER and MassCEC would be responsible for matching up the systems, coordinating review, and providing the project with both Final Statements of Qualification for the SMART and CPS programs.

**8. What modifications to CPS Multipliers, Minimum Standard, ACP Rate, and Seasonal Peak Periods as currently set forth in 225 CMR 21.00, if any, are needed? Please describe in detail and provide any supporting data and analyses.**

**Increasing the ACP Rate**

As covered in our response to questions 3 and 5, the current incentive rate in the CPS program, which is capped by the ACP rate, is too low to attract investors to make financial commitments to CPS resources based on forecasted CPS revenues. The ACP rate prevents price discovery for CPECs in the market today, and the ACP rate decline introduces risk that price discovery will be unachievable in the future. Therefore, in addition to establishing a predictable procurement mechanism (as we cover in our response to question 9), SYSO recommends that DOER increase the current ACP rate and keep that ACP rate steady.





These increases would ensure that projects are able to recover the revenue necessary to provide CPS services now and in the future<sup>4</sup>. As the market becomes saturated, competitive forces will drive CPEC prices below the ACP rate to levels at which the most cost-effective resources are providing these attributes. An ACP rate set below this competitive level will stymie interest in the program because resources would need to take on additional risk in the market hoping that other revenue streams will fill in the revenue gap. Adding risk could drive these developers to invest their capital elsewhere—in programs that provide a better guarantee of revenue adequacy.

SYSO understands that increases to the ACP rate may increase costs to consumers in the short-term as many storage resources continue to work through the interconnection and development process. Therefore, SYSO is not opposed to a short-term reduction in the Minimum Standard to control consumer costs. SYSO would expect that this decrease would be temporary and that in the long run, the Minimum Standard would return to at least the levels outlined in the original regulations.

### **Modifying the Monthly System Peak Multiplier**

The Monthly System Peak Multiplier is based on resource performance during the single highest load hour on the system based on final Revenue Quality Meter (“RQM”) data from ISO-NE. This design was intended to encourage resources to deliver clean energy to the hours which have historically seen the highest emissions. However, this hour is not known until after the month is over, which means that resources need to forecast the load and operate their assets to discharge during those forecasted peaks.

Forecast models are highly dependent on training data and real-time inputs into the models. The better the data, the better the models can get at predicting peak load. Unfortunately, the data available to the marketplace is not perfect. Because ISO-NE does not have RQM data from every generator in real-time, the real-time operational load data that ISO-NE publishes on its website is not the same data that is used in the by the program administrators in calculating the Actual Monthly System Peak. While often highly correlated, the peak load in the operational data can diverge from the peak load in the final RQM data due to unknowable variations in the RQM data from generators that ISO-NE does not monitor. These variations can be significant and can change which hour is the Actual System Peak Load hour for the month.

While we recognize that there will always be elements of unpredictability in load forecasting, given current data limitations, the current Monthly System Peak Multiplier is overly punitive. The current design is binary, either a resource hits the peak load hour or it misses it. Even if a resource discharges in every single other high load hour of the month, if it misses the peak load hour, it will not receive compensation for this peak chasing behavior. Therefore, resources considering investing in technologies to predict peak load hours, need to account for the risk they may not receive any benefit for attempting to hit these peaks.

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<sup>4</sup> Given uncertainty in the markets due to changes in the resource mix, reforms in the wholesale markets, and modification to retail programs, future resource needs could be different than today.



Even if a resource does not hit the peak hour, energy from CPS resources during other nearly as high load hours still provides emissions benefits to the system. Therefore, SYSO recommends “spreading” the Monthly System Peak Multiplier out to the top 3 highest load hours of month, consistent with the table below, to mitigate the risk of missing the single highest hour but still incentivizing resources to perform during high load hours:

**Table 2: Proposed System Peak Multiplier Spread**

<b>Monthly Ranking</b>	<b>Highest Load Hour</b>	<b>2<sup>nd</sup> Highest Load Hour</b>	<b>3<sup>rd</sup> Highest Load Hour</b>
<b>Multiplier</b>	12.5x	7.5x	5x

This distribution of a peak multiplier would incentivize resources to invest in the technology to accurately forecast and perform during the peak load hour of the month but with greater certainty that a resource will see benefit from investing in this capability. Additionally, this design may incentivize additional emissions reductions performance from resources that are confident that they have already hit the peak load hour for the month. These resources will be incentivized to continue to perform to hit other high load periods in order to achieve the same incentive available under the program today, reducing the emissions on the other highest load days.

**9. Please provide any comments on the necessity of, Resource eligibility for, and structure of a CPEC procurement. If in favor of a CPEC procurement, please comment on its timing, in particular if it should occur in parallel with the CPS Review or after, and any considerations DOER should make about the CPEC procurement in light of the CPS Review.**

In addition to increasing the ACP rate as outlined in response to question 8, SYSO also recommends that DOER establish a predictable and stable mechanism for CPS resources to enter into long-term arrangements for CPECs. This will allow CPS resource developers to secure bankable revenue streams, reducing risk in the program and therefore lower overall costs. The current procurement mechanisms for CPECs are insufficient, making underwriting projects in the program difficult and discouraging developers and investors from investing in Massachusetts.

SYSO recommends that DOER implement an open tariff-based mechanism for CPS resources. A tariff-based mechanism will provide the greatest certainty for developers participating in the program, particularly for distribution-connected projects. A tariff-based mechanism would allow projects that are qualified to participate in the CPS program to subscribe to a utility tariff which contains the rate (which could be fixed or variable) at which the resource would be compensated for CPECs for a fixed period of time and transfer the rights of the CPECs to the respective utility for that same period. The rate in this tariff could be established at a fixed value, in declining blocks based on storage or renewable energy penetration, or at values set by periodic auctions. Tariffs are not unfamiliar to investors participating in other state retail programs, including SMART and the NY VDER program, and once established and understood by these investors would provide a foundation for investment in the Commonwealth.



However, we recognize that in addition to a tariff there are a number of other contracting mechanisms that could also be viable for the CPS program, including direct procurement. Additionally, there may need to be different procurement mechanisms for transmission-connected and distribution-connected projects. Tariffs may not allow the market to rationalize other CPEC product offerings sellers and buyers are interested in transacting and could be infeasible for transmission-connected projects under FERC jurisdiction. Therefore, auction-based mechanisms and procurement-based mechanisms could also provide investors with similar opportunities for revenue certainty in the CPEC market, particularly for transmission-connected projects. Under any proposed mechanism, SYSO recommends that it includes the following:

- An opportunity to secure **multi-year term arrangements** up to at least 10 years
- An opportunity to secure **arrangements up to 2 years ahead of the calendar year**
- **Standard terms** that do not vary significantly year-to-year
- **Clear eligibility and selection criteria**

Regardless of the mechanism, DOER should seek to establish a program as soon as possible as this mechanism will be critical to ensuring that the program is successful in both short- and long-term development. There are significant quantities of energy storage projects being developed in both the state-jurisdictional and FERC-jurisdictional queues. These projects will need to make financial decisions regarding whether they are staying in the queue and committing to system upgrade costs very soon. Without a predictable mechanism to sell CPECs, these projects may be forced to withdraw due to financing complications. Projects re-entering the queue and studied by the utility or ISO-NE under their new interconnection process<sup>5</sup> will take years to before they are ready to be commercialized.

#### **10. How well does the CPS align with other Commonwealth programs, such as SMART and ConnectedSolutions, to incentivize the deployment of peak reducing resources, and how could program alignment be improved?**

##### **Adjusting the SMART Multiplier**

Energy storage projects that are co-located with a Solar Tariff Generating Unit (STGU) enabling a SMART energy storage adder under the SMART program are also allowed to participate in the CPS program and retain ownership of the generated CPECs. Independent of the SMART adder applicable to these projects, the CPEC's generated by these resources are subject to a 0.3x multiplier. Because the SMART adder can vary significantly, projects that are participating in lower-priced SMART tranches may find that the CPS incentives are insufficient to encourage cycling during peak periods, particularly during the fall and spring where there is no seasonal multiplier to balance the SMART derate.

In order to encourage CPS participation by all SMART assets, SYSO recommends that the SMART ES Multiplier in the CPS program inversely scales with the SMART tranche, such that the combination of the SMART and CPS incentive during peak load hours remains roughly

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<sup>5</sup> ISO-NE will be submitting a compliance filing to reform their interconnection process to conform with FERC Order 2023. This new process will study projects as part of a cluster on a fixed schedule and will take 2 years and 4 months to complete. After the transitional cluster study, the first propose cluster window is expected to open in late 2025, which would result in interconnection agreements in early 2028.



constant and results in asset performance throughout the entire year. Because the SMART energy storage adder declines 4% every tranche, SYSO recommends increasing the SMART ES multiplier in the CPS program by 0.04x for each SMART tranche, as shown in the table below. For example, an energy storage project that resulted in a STGU with an energy storage adder in Tranche 6 would receive a SMART ES Multiplier of 0.5x in the CPS program.

**Table 3: Proposed SMART ES Multiplier based on Adder Tranche**

SMART Energy Storage Adder Tranche	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
SMART ES Multiplier	0.3	0.34	0.38	0.42	0.46	0.5	0.54	0.58	0.62	0.66	0.7	0.74	0.78	0.82	0.86	0.9

### ConnectedSolutions

Currently the metering rules for energy storage projects participating in the ConnectedSolutions program allows co-participation in the CPS program. However, if the ConnectedSolutions programs began to assess battery performance on a baseline, then co-participation between these two programs would become untenable. The CPS program incentivizes battery projects to cycle almost every day. ConnectedSolution's baselines are created from days without ConnectedSolution's events. Even though storage projects would not be participating in ConnectedSolutions during these days, they would very likely be participating in the CPS program. CPS participation would therefore effectively "erode" a battery storage resource's baseline and result in no performance in the ConnectedSolutions program. This could unintentionally lead to unwanted behavior, including foregoing CPS participation during days that impact a baseline, eliminating MWs that could and otherwise would have been contributing to the CPS program.

Therefore, SYSO recommends that the ConnectedSolution program continue to measure battery performance at the battery meter.

### ISO-NE Reserve Designations

In 2020, DOER published a guideline declining to create a mechanism by which a CPS resource could generate CPECs by providing reserves in the ISO-NE wholesale markets. Providing reserves in the wholesale markets remains an important service for energy storage systems, which are able to reduce overall reserve market costs and reduce emissions associated with reserve designations. These impacts could potentially grow as ISO-NE reforms their reserve markets and creates new reserve products to address changing system needs<sup>6</sup>. By preventing energy storage from generating CPECs from reserve designations, DOER is arbitrarily incentivizing these resources to provide energy, which may or may not result in what would otherwise have been the most cost-efficient and lowest-emissions solution. These issues could be exacerbated if additional transmission-connected projects participate in the program, as these assets have a greater incentive to participate in the reserve markets.

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<sup>6</sup> ISO-NE recently received approval for their [Day-Ahead Ancillary Services Initiative](#), which creates new day-ahead reserve products to improve system reliability due to forecast uncertainty, and is seeking to explore additional reserve products to address additional flexibility needs as part of its 2024 [Annual Work Plan](#).



SYSO understand that DOER does not believe that the definition of a “clean peak resource” under the CPS statute at M.G.L Chapter 25A, Section 3, allows for the use of a reserve designation to generate a CPEC, because “energy reserves do not represent energy generated, dispatched, or discharged.”<sup>7</sup> However, now more than ever, reserves are part of ISO-NE’s “dispatch” algorithm and therefore do qualify under the statute definition.

Therefore, SYSO recommends that DOER reopen this issue, setting a new deadline in section CMR 21.05 (7) of December 31, 2024 for establishing a mechanism, and applicable requirements, for producing CPECs from reserve designations.

**12. Please describe any factors outside of the CPS Program that impact the ability of Resources to enroll or participate in the CPS Program, and any mitigation recommendations you have for DOER.**

Incentives under the CPS program are only one piece of the complex puzzle of developing energy storage projects in Massachusetts. Factors outside of the CPS, including wholesale market dynamics, permitting, financial markets, and interconnection costs, all play just as large of a role in project development as the CPS program. Interconnection, for example, has continued to plague projects in Massachusetts as the grid rapidly evolves to support the resources necessary to meet GWSA goals. Even with novel changes in the way we think about interconnection, like the Provisional System Planning Process<sup>8</sup> and measures like operational tariffs<sup>9</sup>, energy storage facilities will still likely be assigned significant interconnection costs.

Critically, to ensure that the Commonwealth continues to make progress toward their goals, the interaction between these different factors needs to be flexible. If there are challenges in one area, like interconnection, there needs to be enough slack in the other areas, like CPEC pricing, to continue to allow projects to be developed cost effectively. The recommendations above are intended to ensure that CPS program is sufficient to attract development and robust to system changes, signaling that to the market that Massachusetts remains committed to meeting the goals of the GWSA through the development of energy storage projects.

**Conclusion**

SYSO looks forward to continuing to work with DOER to improve the CPS program and bring projects into the market.

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<sup>7</sup> <https://www.mass.gov/doc/clean-peak-energy-reserves-guidelines/download>

<sup>8</sup> For example, under the first approved Capital Investment Project (Marion-Fairhaven) under the Provisional System Planning Program, projects are still responsible for \$370/kW of network upgrade costs in addition to facility-specific upgrade costs and contribution in aid of construction carry charges.

<sup>9</sup> While operational tariffs can mitigate the need for upgrades, operating windows undermine optimal storage dispatch and may hinder participation in programs with fixed incentive windows, like the CPS program.