



July 24, 2025

VIA EMAIL

Department of Energy Resources (DOER)  
Commonwealth of Massachusetts

**RE: Comment on 225 CMR 28.10(b) – Proposed Adjustment to Minimum Operational Requirement for Repowered Solar Sites**

Dear Commissioners and Members of the Department of Energy Resources,

Luminace, a Brookfield Renewable company, appreciates the opportunity to submit these comments on the proposed revisions to the Solar Massachusetts Renewable Target (SMART) Program, specifically regarding 225 CMR 28.10(b) for Relocated and Replacement Solar Tariff Generation Units.

Luminace is a national distributed generation platform owned by Brookfield Renewable, one of the largest renewable power operators globally with over 31 GW of generating capacity. At Luminace, we focus on developing, owning, and operating distributed energy infrastructure - primarily commercial-scale solar and energy storage - across Massachusetts and the broader Northeast. We serve a wide range of customers, including municipalities, schools, hospitals, affordable housing providers, and Fortune 500 corporations, delivering long-term clean energy solutions that support the Commonwealth's ambitious decarbonization goals.

Recent federal and regulatory developments - including the reduction in Investment Tax Credit (ITC) eligibility for certain projects, new tariffs on solar panel imports, Canadian steel and aluminum, and copper, the ongoing Section 232 investigation, forthcoming Treasury guidance updates related to safe harboring, and intensified federal permitting scrutiny - have dramatically increased soft costs, lengthened interconnection timelines, and put numerous projects at risk. These external pressures place renewed importance on what states like Massachusetts can do to maintain clean energy momentum, support project viability, and uphold thousands of solar jobs.

We believe one of the most impactful and immediate steps the Department can take is to unlock the potential of previously developed solar sites nearing - but not yet meeting - the current 15-year operational requirement. Adjusting the threshold to 10 years would enable many of these legacy projects to be repowered with modern, high-efficiency equipment using existing infrastructure and interconnections. This would result in the delivery of more clean energy, at lower cost to ratepayers, and on a faster timeline - while avoiding new environmental impacts and reducing exposure to shifting federal policies.



Enclosed, please find our proposed revision, technical analysis, and supporting graphics. We would welcome the opportunity to provide further data or discuss this proposal in more detail.

Sincerely,  
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## **2. Technical Analysis & Policy Rationale**

### **Proposed Revision to 225 CMR 28.10(b): Introduce Tiered Eligibility for Repowered Solar Sites**

We respectfully support amending 225 CMR 28.10(b) to introduce a tiered incentive structure for repowered solar systems based on their operational age. Reducing the current 15-year minimum to a graduated approach starting at 10 years would unlock substantial underutilized capacity across Massachusetts.

This change is particularly meaningful for developers like Luminace, which owns and operates a large portfolio of aging projects and can quickly repower those sites using modern equipment. These systems are shovel-ready, already have site control, utility approvals, and permitting, and can be brought online with much less delay and cost than new builds.

Importantly, this is a low-risk policy change for DOER: it supports more clean energy without expanding program caps, avoids new land disturbance, and does not materially change ratepayer cost exposure. Instead, it accelerates output from already-discounted interconnections and reduces soft costs that have ballooned due to tariffs, permitting backlogs, and labor shortages. For Massachusetts, this means faster deployment, more LMI solar participation, and enhanced grid efficiency—with no need for new infrastructure buildout.

### **Proposed Redline SMART Language**

We recommend revising 225 CMR 28.10(b) as follows:

“A solar photovoltaic Generation Unit that replaces an inactive or decommissioned solar photovoltaic Generation Unit that had operated on the same site before June 20, 2025 for at least 10 years may submit a Statement of Qualification Application under 225 CMR 28.00 and qualify for the following incentive levels based on the operational age of the original system:

- **10 to <12 years of prior operation:** Eligible for **50%** of the applicable Base Compensation Rate and Compensation Rate Adders for the Program Year in which the Statement of Qualification Application is submitted.
- **12 to <15 years of prior operation:** Eligible for **75%** of the applicable Base Compensation Rate and Compensation Rate Adders.
- **15 or more years of prior operation:** Eligible for **100%** of the applicable Base Compensation Rate and Compensation Rate Adders.

Notwithstanding any other provisions of this regulation, such replacement Generation Units shall **not** be subject to the co-located energy storage requirements otherwise applicable to Solar Tariff Generation Units with a capacity greater than 1 MW AC.”

### **Reuses Critical Site Infrastructure**

Repowered systems leverage existing fencing, roads, site access, racking, and interconnection equipment - saving soft costs and avoiding permitting. This reduces embodied emissions and minimizes disruption to undeveloped land, wetlands, and core habitats<sup>1</sup>.

### **No New Transformer Procurement Required**

Transformer lead times now average **115–130 weeks**, with some projects experiencing up to 3-year delays<sup>2</sup>. Repowering with the same AC interconnection sidesteps this challenge.

### **Faster Permits and Clean Energy Deployment**

Utilizing existing site infrastructure and avoiding new permitting accelerates timelines which helps support Massachusetts’ 2030 and 2050 Clean Energy and Climate Plan goals<sup>3</sup>.

### **Eliminates Local Opposition**

Multiple Massachusetts towns, including Northfield, Wendell, and Dighton, have enacted moratoriums on new solar and battery storage projects<sup>4</sup>. Sites already permitted typically won’t require new local approvals and therefore lend broader public support.

### **Mitigates Ratepayer Cost Escalation**

Recent changes to federal policy - including ITC eligibility constraints, import tariffs on solar panels, steel, and copper, and shifting safe harbor rules - have driven up rate payer costs significantly<sup>5</sup>. Repowering through SMART can help insulate ratepayers from these pressures.

### **Expands LMI Solar Access**

DOER analysis found that only **2.5%** of total SMART capacity currently serves low-income eligible subscribers<sup>6</sup> (see graphic in appendix). Accelerating the deployment of repowered systems - particularly those participating in the Low-Income Community Shared Solar (LICSS) program - can help address this inequity. Repowered systems have a clear path to near-term

operation due to their existing infrastructure, interconnection, and site control, enabling rapid onboarding of new LMI subscribers without multi-year development delays.

In addition, if repowered systems are eligible for LICSS and Community Shared Solar adders (especially at full rather than reduced value), developers will be economically incentivized to structure projects to benefit low-income customers. This makes repowering a high-leverage, cost-effective mechanism to increase LMI access within SMART's existing framework—at a time when new greenfield sites face rising development barriers.

### **Reduces Embodied Carbon and Material Use**

Reusing existing infrastructure such as racking, fencing, roads, and interconnection avoids the need for new site development and reduces the lifecycle emissions associated with civil work and balance-of-system materials<sup>7</sup>.

### **Lifecycle & Policy Milestones Support 10 Years**

- **MACRS** depreciates solar equipment over 5 years<sup>8</sup>.
- **Inverters** typically require replacement after 10–12 years<sup>9</sup>.
- **New Jersey** allows systems >15 years old to qualify as new Class I RECs<sup>10</sup>.

These milestones reflect federal tax treatment and industry norms, and support updating Massachusetts policy to align with modern equipment lifecycles.

### **Equity & Ratepayer Value Comparison: New Jersey vs. Massachusetts SMART**

If Massachusetts retains the 15-year operational threshold, while only offering 50% of the SMART Base Compensation Rate for repowered systems, it may undervalue projects compared to other states - particularly New Jersey - leading to the Commonwealth losing their leadership position in both renewable energy development and policy.

- In New Jersey, repowered systems over 15 years old can qualify for full Class I REC value, currently in the range of \$85–\$110/MWh (\$0.085–\$0.11/kWh)<sup>11</sup>.
- Importantly, these projects also receive additional compensation through PPAs or community solar bill credits, often worth an additional \$0.10–\$0.12/kWh or more depending on offtaker structure and location<sup>12</sup>.
- In contrast, Massachusetts SMART projects between 1–5 MW AC receive a Base Compensation Rate of \$0.1729/kWh<sup>13</sup>.

- Under current SMART rules, a repowered project would receive only **\$0.08645/kWh** - less than New Jersey's REC value alone, with no additional offtake or energy credit revenue unless separately negotiated.

**Recommendation:** If DOER elects to maintain the 15-year repowering requirement, it should consider:

- Increasing the incentive above 50% of the base rate, or
- Allowing repowered systems to stack with other monetizable value streams, such as exempting them from storage mandates or enabling community solar participation.

This ensures that Massachusetts remains competitive, supports infrastructure reuse, and appropriately values repowered systems as a low-cost, low-risk decarbonization pathway.

### **Co-Located Energy Storage Requirement Should Be Waived for Repowered Systems**

One of the primary benefits of repowering is the ability to reuse existing site infrastructure - including racking, fencing, roads, and interconnection to deliver more clean energy with lower environmental and ratepayer costs. Requiring the addition of co-located battery storage for repowered systems above 1 MW AC would fundamentally undermine this objective.

Battery procurement is subject to multi-year delays due to global supply chain constraints, and integrating new storage systems often necessitates substantial electrical redesign, additional permitting, and new site infrastructure - all of which increase costs, extend timelines, and introduce new risks. These requirements directly conflict with the SMART Program's goals of accelerating solar deployment, minimizing land disturbance, and maintaining affordability for Massachusetts ratepayers.

Moreover, repowered systems that remain at their existing AC interconnection size pose no additional grid burden compared to their original configuration. As such, exempting them from the energy storage requirement is both practical and equitable, and would bring SMART policy in line with its stated climate and equity goals.

### **Efficiency Comparison and Output Potential**

The table below illustrates the significant performance gains achievable through repowering a typical 1 MW AC solar site. While maintaining the same interconnection and AC capacity, modern systems can support higher DC loading due to improved inverter efficiency (up to 99.5%) and increased panel efficiency (up to 21.5%). As a result, repowered systems can safely increase their DC:AC ratio to 2.0 and boost production by more than double compared to degraded 10-year-old systems. This demonstrates how repowering enables Massachusetts to



generate cleaner energy, faster, using existing infrastructure.

| System Attribute            | 2015 System | 2025 Degraded | 2025 Repowered |
|-----------------------------|-------------|---------------|----------------|
| AC Capacity                 | 1.0 MW AC   | 1.0 MW AC     | 1.0 MW AC      |
| DC Capacity                 | 1.2 MW DC   | 1.2 MW DC     | 2.0 MW DC      |
| Panel Efficiency            | 15–17%      | 10–12%        | 21.5%          |
| Inverter Efficiency         | 95%         | 95%           | 99% - 99.5%    |
| Max DC:AC Ratio             | 1.2         | 1.2           | 2.0            |
| Production Factor (kWh/kWp) | 1,200       | 1,026         | 1,294          |
| Annual Output (kWh)         | 1,368,000   | 1,231,200     | 2,587,000      |

## Conclusion

Reducing the repowering eligibility threshold from 15 to 10 years offers a practical, low-cost pathway to accelerate solar deployment in Massachusetts. Doing so will maximize use of existing infrastructure, minimize environmental impact, ease local siting conflicts, and provide faster relief to ratepayers facing rising electricity costs. Alternatively, if the Department elects to maintain a 15-year threshold, we urge reconsideration of the current 50% compensation rate for repowered systems—particularly for projects approaching the threshold or facing economic hardship due to shifting federal incentives.

We would welcome the opportunity to provide additional data or collaborate with DOER to refine this proposal.

Sincerely,

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## Appendix A: Graphics

Figure 1: Typical Infrastructure Reuse in Repowered Solar Projects

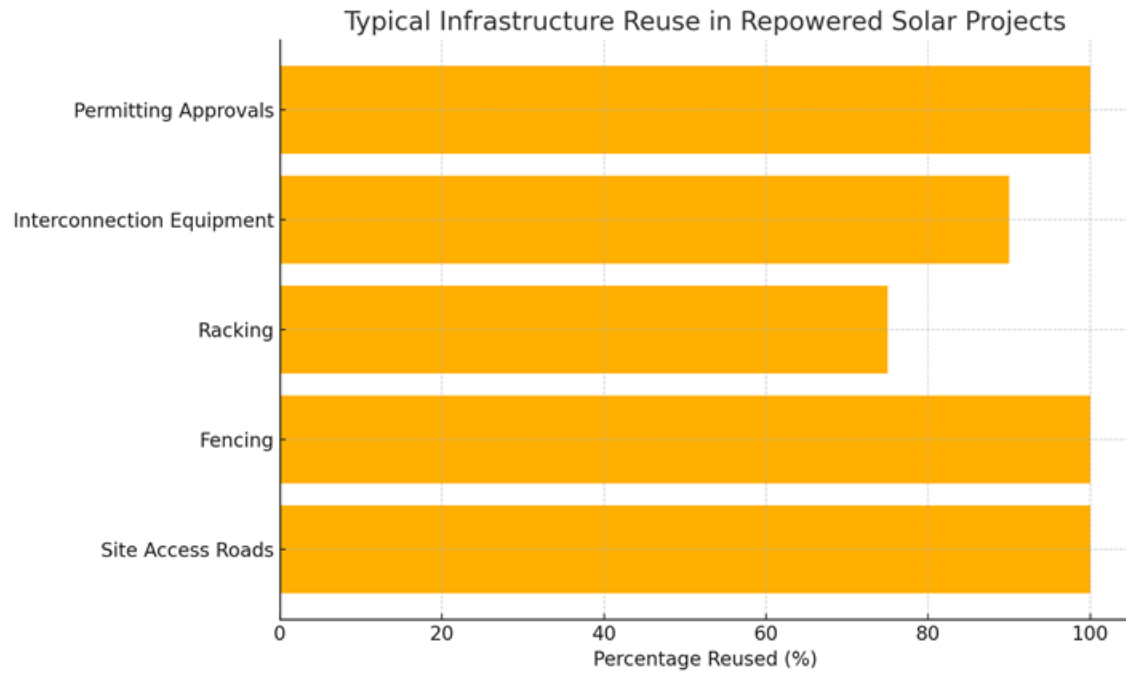
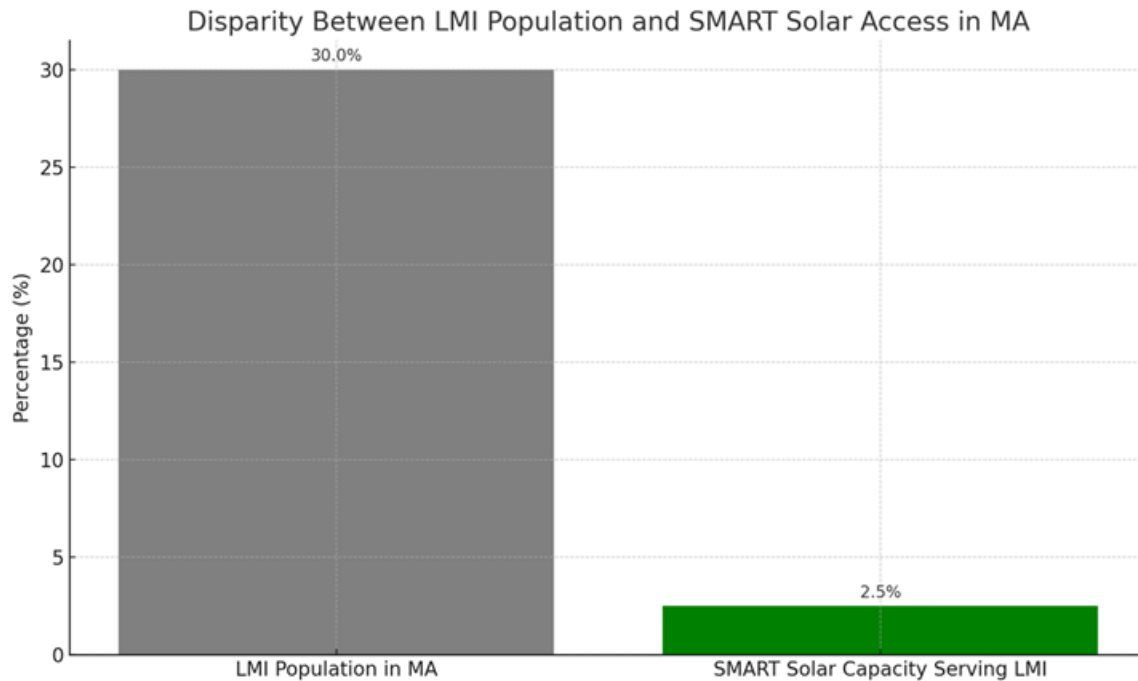


Figure 2: Disparity Between LMI Population and Solar Access in Massachusetts



## Appendix B: References and Footnotes

1. U.S. Environmental Protection Agency, “Greenhouse Gas Equivalencies Calculator,” and NREL, “Life Cycle Greenhouse Gas Emissions from Solar Photovoltaics,” 2021.
2. U.S. Department of Energy, “Transformer Supply Chain Challenges,” 2024; T&D World, “Meeting Electricity Demand in the Age of AI,” June 2024.
3. Massachusetts Clean Energy and Climate Plan for 2050, Executive Office of Energy and Environmental Affairs, 2022.
4. The Recorder (Northfield), “Moratoriums on Large-Scale Solar and Battery Storage Passed,” Nov. 2023; Athol Daily News, “Wendell Adopts Solar Moratorium,” Dec. 2023.
5. IRS Notice 2023-38 on ITC Guidance; Wall Street Journal, “How Tariffs Could Shock America’s Power System,” May 2024.
6. Massachusetts DPU Press Release, “DPU Issues Order on Low-Income Solar Access,” June 4, 2024.
7. DOE Solar Futures Study, 2021; Energy.gov, “PV End-of-Life Action Plan Update,” 2024.
8. IRS MACRS Depreciation Schedule, IRS Pub. 946 (2023).
9. NREL, “Photovoltaic Degradation Rates—An Analytical Review,” 2016.
10. New Jersey Board of Public Utilities, “Successor Solar Incentive Program (SREC-II) Final Program Rules,” 2023.
11. New Jersey Board of Public Utilities, SREC-II Market Pricing (Class I REC spot market rates), via PJM-GATS and Flett Exchange.
12. Based on NJ BPU Community Solar Pilot Program results, 2021–2023. Sources: NJ Clean Energy Program and Energy Sage community solar pricing.
13. Massachusetts DOER, SMART 3.0 Base Compensation Rates, as published on [mass.gov](https://www.mass.gov).