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Samantha Meserve
Renewable and Alternative Energy Division Director
Massachusetts Department of Energy Resources
100 Cambridge St, 9th Floor
Boston, MA 02114

Subject: SMART Review Comments

Dear Ms. Meserve,

Please accept these written comments from Aspen Power as part of the DOER's review of the Solar Massachusetts Renewable Target (SMART) Program.

1. The SMART program currently provides added incentives for certain project types, including building mounted, canopy mounted, landfill, brownfield, agricultural, floating, community solar, and projects serving low income or public entities, projects with energy storage, and axis tracking. DOER seeks additional feedback on changes or improvements that will advance achievement of the Commonwealth's 2050 GWSA mandates while balancing land use, equity, and economic considerations.

A. What project type incentive changes could improve program outcomes?

- i. **Location Based Adders.** Additional incentives for Building Mounted and Canopy installations would greatly improve the outcomes of the SMART Program and enable the Commonwealth to reach the goal of 10GW of solar deployed by 2030 as set out by Governor Healey. With the Department's recent *Massachusetts Technical Potential of Solar Study* (2023), the technical potential of Rooftop solar and Canopy solar were identified as 40GW and 14GW, respectively.

With significant experience in developing commercial-scale rooftop and canopy solar projects in Massachusetts, one of the greatest limiting factors we regularly encounter is a rejection of a project from the building / parking lot owner due to the lease amount that is reasonably able to be afforded by the project. These commercial property owners often cite the roof or parking lot lease payments we are able to offer as too low to garner their interest in the project, and as a result the project is not built. Simply put, if there is little incentive for owners of commercial and industrial property to host a solar project on their roof or in their parking lot, they will not do it.

This issue was recently acknowledged by the Department in the *Massachusetts Technical Potential of Solar Study*. While we understand and appreciate the need to balance program costs with policy goals of deploying distributed solar on the built environment, we contend that the incentive rates under the SMART Program (in all utility territories) are too low at this point in the program to allow for the continued development of rooftop and canopy solar at the rate the Commonwealth needs to achieve 10GW of solar energy installed by 2030.

- ii. **Energy Storage Adder.** A more robust Energy Storage Adder would be greatly beneficial to the SMART Program and the Commonwealth's energy storage goals. Currently, the SMART Program's

Energy Storage Adder is in Tranche 12 and will soon be in Tranche 13. These result in a range of potential adders of approximately \$0.0151 /kWh to \$0.0467 /kWh. According to the most recent release of SMART Program information, the average nameplate capacity of an energy storage system is 58.86% of the DC size of the STGU, and the average duration of an energy storage system is 2.88 hours (these average values are for all Large STGUs to date that have qualified for the Energy Storage Adder).

Under these average configurations, a STGU applying for Tranche 12 of the Energy Storage Adder would receive an Adder value of \$0.037 /kWh which, while not insignificant, does not provide a clear enough market signal for these STGUs to adopt energy storage. Accordingly, we suggest an examination of the Energy Storage Adder (which may include adjusting the Adder calculation or freezing the Adder Tranche in place) in order to drive significant growth in the deployment of energy storage in the Commonwealth.

- iii. **Solar Tracking Adder.** Aspen Power appreciates the Department allowing single-axis trackers to be eligible for the Solar Tracking Adder as part of its 2020 400MW Review emergency rulemaking process. However, we disagree with holding the Solar Tracking Adder subject to its original 4% decline in value per tranche. Similar to Building Mounted and Canopy solar, Tracking solar is subject to additional costs for installation when compared to traditional fixed tilt ground-mounted racking. We respectfully request that the Department freeze the Solar Tracking Adder Tranche 1 value of \$0.01 /kWh throughout all subsequent Tranches, as it has done for each Location-Based Adder. This would allow for the continued growth of Tracking solar which is substantially more efficient at harvesting energy than traditional fixed-tilt ground-mounted solar.

B. Should other project types also be prioritized?

The Department should consider additional Adders to further incentivize the following project type:

- i. **Multi-Family Housing Adder.** With Governor Healey's stated goal of vastly increasing the amount of housing units in the Commonwealth, providing an Adder for these specific types of projects would ensure renters can benefit from onsite solar. While there are incentives for Low Income Properties under SMART, we pose that expanding this incentive to encompass all multi-family housing would be beneficial to the SMART Program. These types of projects often face unique challenges and substantially higher costs than traditional rooftop projects due to the need to install several smaller STGUs on each building with multiple interconnections rather than installing a single large rooftop STGU. To provide further benefit to low-moderate income ratepayers, this adder can have two sub-categories; one for affordable housing and one for market-rate housing.

2. The current SMART program structure includes a declining block model. Is a structure with fewer blocks and a greater decline between blocks preferable to a greater number of blocks with a smaller decline between blocks? Are there any other modifications to the declining block model structure that could more effectively support solar development?

Maintaining the current block structure with a greater number of blocks and a smaller decline between blocks would be more beneficial, as the risks associated with projects falling into the next block will be lessened. If there were a more substantial decline in rates between blocks, attrition of projects would likely increase as a greater decline in the SMART incentive would threaten project economics, leading to cancellation of projects.

Regarding potential modifications to the declining block model structure, we recommend that the current rates of decline between blocks (i.e. 2% for Behind-the-Meter projects and 4% for Standalone projects in Eversource and National Grid) act as a ceiling for the rate of decline, but the actual rate of decline should be updated either annually

or per block in accordance with a formula that accounts for general economic indicators (such as the Consumer Price Index, interest rates, retail electric rates, etc.). This would allow for the SMART Program to adjust to ongoing economic fluctuations while providing a degree of price certainty to developers when making investment decisions.

3. Are any eligibility criteria in the SMART program a barrier to participation? What are they, and how would you address these barriers? How would you streamline these eligibility criteria?

There are several eligibility criteria that act as a barrier to SMART program participation:

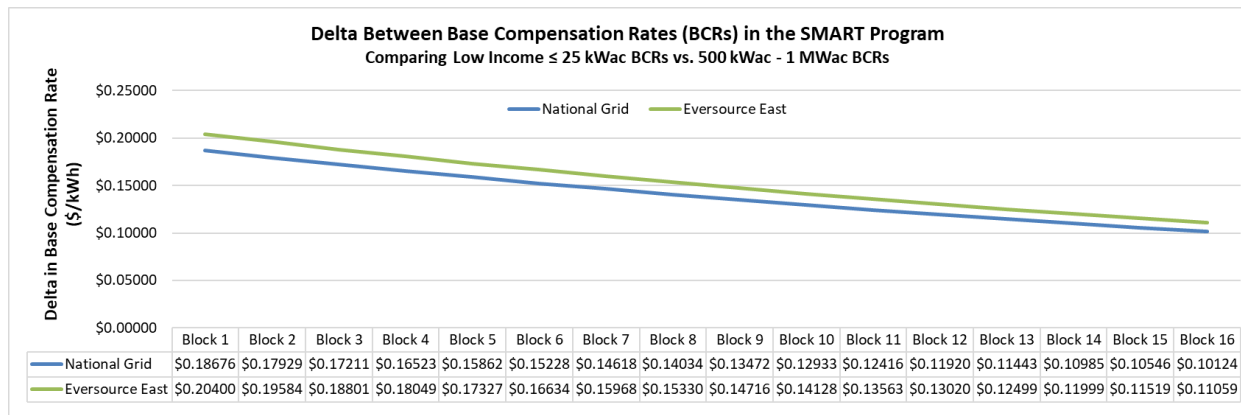
- A. **Energy Storage requirement for projects > 500 kWac.** Aspen recognizes the critical need for energy storage in the Commonwealth, however the current energy storage requirement for all projects > 500 kWac acts as a barrier to both solar and energy storage deployment. While the amount of energy storage required scales with the DC size of the solar PV (to meet the eligibility requirements of the Energy Storage Adder), the corresponding Energy Storage Adder rate does not scale.

Fundamental to the SMART Program structure is the scaling of Base Compensation Rates based on the AC size of the STGU in order to appropriately address economies of scale. Following this logic, the Energy Storage Adder (and all other SMART Adders) should correspondingly scale with the AC size of the STGU. This is particularly relevant for the Energy Storage Adder as the current rates (Tranche 12 as of the date of these comments) do not support the deployment of mid-sized solar + storage projects. As a result of this, developers with projects in the > 500 kWac – 3 MWac range are oftentimes forced to downsize their projects to ≤ 500 kWac in order to avoid the uneconomical Energy Storage requirement, while other projects in the 3 MWac – 5 MWac range are better able to retain their economic viability with the ever-diminishing Energy Storage Adder. This leads to missed opportunities for the deployment of STGUs in areas where distributed energy resources demonstrate high value, such as large commercial rooftops and parking lots.

If scaling of the Energy Storage Adder (and all other SMART Adders) were to be implemented, this would eliminate the dilemma developers face when making design decisions for their projects and would create a more effective solar industry in Massachusetts.

- B. **Capping the SMART All-in Compensation Rate at the Low Income ≤ 25 kWac Base Compensation Rate.** In the design of the SMART Program, the Department created clear signals to stack multiple Adders (such as Location Based Adders, Offtaker Based Adders, and the Energy Storage Adder) to drive outcomes that aligned with the policy goals of Chapter 75 of the Acts of 2016. However, the program rule of a SMART project's All-in-Compensation Rate being capped at the Low Income ≤ 25 kWac Base Compensation Rate (BCR) presents challenges for project economics as capacity blocks are filled. Due to the structure of Base Compensation Rates, the delta between the Low Income ≤ 25 kWac BCR and the > 500 kWac – 1 MWac BCR has dwindled significantly as blocks have been filled. As a result, a project's ability to stack Adders is lessened because the combination in Adder value is increasingly likely to surpass the Low Income ≤ 25 kWac BCR.

The graph below shows the delta between the Standalone Low Income ≤ 25 kWac BCR and the > 500 kWac – 1 MWac BCR for National Grid and Eversource East. While earlier blocks had deltas of approximately \$0.18 - \$0.20 /kWh, leaving ample room for Adder stacking, the later blocks of the program see the delta diminish to approximately \$0.12 - \$0.13 /kWh in the current blocks and to approximately \$0.10 - \$0.11 /kWh by Block 16:



As an example of this phenomenon, a hypothetical 1,400 kWdc / 1,000 kWac STGU in National Grid territory qualifying for the Canopy Adder, the Low Income Community Shared Solar Adder, and the Energy Storage Adder would have its All-in Compensation Rate calculated as follows:

	Block 1	Block 11	Block 16
Base Compensation Rate (BCR):	\$0.17119	\$0.11381	\$0.09280
Canopy Adder:	\$0.06000	\$0.06000	\$0.06000
Low Income Community Shared Solar Adder¹:	\$0.06000	\$0.05308	\$0.04892
Energy Storage Adder²:	\$0.05800	\$0.03700	\$0.03140
Total SMART Compensation Rate:	\$0.34919	\$0.26390	\$0.23312
Low Income < 25 kWac BCR:	\$0.35795	\$0.23798	\$0.19404
Lost Value (\$/kWh):	\$0.00000	-\$0.02592	-\$0.03908

1. Assumes Tranche 1 Adder for Block 1, Tranche 4 Adder for Block 11, and Tranche 6 Adder for Block 16 examples.
2. Assumes Storage Capacity of 58.86% of Solar DC size and Duration of 2.88 hours (average values for all Large STGUs to date that have qualified for the Energy Storage Adder). Assumes Tranche 1 Adder for Block 1, Tranche 12 Adder for Block 11, and Tranche 16 Adder for Block 16 examples.

As can be seen in this example, the realized value of these Adders increasingly diminishes as the SMART Program blocks are filled. The STGU does not lose any value in Block 1 but loses approximately \$0.026 /kWh and \$0.039 /kWh in value for Blocks 11 and 16, respectively.

As a remedy to this phenomenon, we propose removing the requirement that no combination of a project's BCR and Adders can exceed the BCR of the Low Income ≤ 25 kWac BCR.

4. Is the current SMART reservation period (excluding any blanket extensions) adequate given current development and construction timelines? If possible, please provide a representative project timeline inclusive of key project milestones, such as permitting, procurement, and interconnection, to help inform DOER's understanding of the development process and current project timelines.

The current SMART reservation period is too short for certain types of projects and should be extended. While 12 months is reasonable for projects ≤ 500 kWac, larger projects oftentimes face significant delays in permitting, procurement, and construction that jeopardize SMART program eligibility, especially in light of energy storage requirements for any STGU > 500 kWac. We propose that the DOER assign SMART reservation periods based on the AC size of the STGU: STGUs ≤ 500 kWac may retain their 12-month initial registration period, but any STGUs > 500 kWac receive a 24-month initial registration period. As a means of ensuring that STGUs that receive a Statement of Qualification are "real" projects and not reserving program capacity for projects that will never be built, a potential solution could be the implementation of quarterly milestone reporting requirements, akin to the SuSI Program in New Jersey.

5. Are there any emerging technologies or project types that are not currently eligible for SMART that DOER should consider making eligible for the program? Please describe potential project applications, any suggestions for eligibility requirements, and what level of incentives if any would be needed spur project development of the project type.

Green hydrogen is emerging as a critical component of the energy transition. In order to stimulate the development of local green hydrogen, the DOER should consider allowing these types of projects to participate in the SMART Program. While these projects are most often off-grid and thus unable to be interconnected to the distribution grid, there is substantial benefit in the production of local green hydrogen that should be considered by the DOER. Further, since these projects will most often be off-grid, this policy would substantially alleviate pressure on existing grid infrastructure while simultaneously preserving a strong solar industry in Massachusetts.

6. Are program compliance requirements clear prior to program enrollment? What are the key challenges with satisfying the data and/or documentation requirements for various program compliance checks, such as compliance with the energy storage, low-income, or community solar requirements? Are there any modifications you would suggest to DOER's compliance processes, or alternative data/documentation you believe could satisfy the requirements?

We have several recommendations relating to program compliance requirements:

- A. We believe placing a one-time limit on adding/removing an Off-taker Based Adder does not serve the goals of the SMART Program.** For larger projects enrolled in the 20-year program, there are oftentimes multiple changes in ownership throughout the term. Different owners may prefer different Off-taker Based Adders (or none at all), so it does not make sense to limit projects to only one change throughout their 20-year life. We understand that the Department and Distribution Companies do not wish to process multiple changes to a project's Off-taker class throughout its term as that may be administratively burdensome, so in the interest of fairness we propose Off-taker Based changes be subject to a processing fee as certain other SMART registration changes are.
- B. Low-Income Customers should be able to self-certify their income status or be able to provide alternate documentation to certify they are low-income.** Under SMART Program rules, if a Low-Income customer is not a resident in a Low Income Eligible Area, the SMART Program requires these customers to be enrolled in "a low-income discounted rate of a Distribution Company". Narrowing the definition of eligible Low-Income Customers (living outside of a Low Income Eligible Area) only to customers on a discounted rate schedule of their Distribution Company limits the ability for these customers to realize savings by enrolling in a Low Income Community Shared STGU. This premise assumes that all low-income ratepayers in Massachusetts are aware of and have signed up for a low-income discounted rate schedule. There are likely thousands of ratepayers in Massachusetts that meet the Distribution Company's definition of low-income but, for one reason or another, have not signed up to be on a low-income rate schedule.

By allowing Low-Income Customers to either self-certify their income status or be able to provide alternate documentation to certify they are low-income (such as proof of participation in Medicaid, Supplemental Security Income, Social Security Disability Insurance, Special Supplemental Nutrition Program for Women, Infants, and Children, Temporary Assistance for Needy Families, the Low Income Household Water Assistance Program, etc.), as is the case in several other states, the SMART Program and all ratepayers will be able to realize the benefits of community shared solar.

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

Yes, the SMART application process is clear. However, it would be beneficial to provide further transparency and accountability standards relating to Preliminary and Final Statement of Qualification processing timelines.

8. Are there solar canopy project types that currently fall outside the SMART program's definition of Solar Canopy that you believe should be eligible for the Canopy adder? Please provide example project types and describe their benefits.

We do not have any recommendations for solar canopy project types that should be eligible for the Canopy adder. However, we believe it would be beneficial to introduce a "Canopy + EV Charging" Adder that would incentivize the adoption of EV Charging stations with solar canopies.

9. Are there examples of dual use agrivoltaics policies in other jurisdictions that align with Massachusetts' solar and agricultural objectives? Please provide citations and summaries of those policies.

No, we believe Massachusetts has the strongest agrivoltaics policy in the nation by establishing an Adder for these types of projects and setting clear guidelines for their implementation.

However, we believe agrivoltaics in Massachusetts is a highly under-utilized resource. With only 32 MWac qualified for the Agricultural Adder under SMART, changes in incentive levels or qualification guidelines should be examined.

For example, land with farmland soils that are forested are ineligible to participate in SMART, and program rules require that land be in agricultural operation prior to an application to the SMART Program. These requirements prevent new farms from opening as there is a barrier to entry for farmers that may not earn enough income on farming alone. As a result, this excludes land that may otherwise be developed into housing or commercial real estate from solar development. We propose that developers should be allowed to clear forestland for agricultural use and that agricultural operations can begin concurrent with construction of an STGU to promote new sustainable dual-use farming opportunities that provide income to landowners from crops as well as land lease payments.

10. What modifications to SMART incentive payment calculations, as currently set forth in 225 CMR 20.08, if any, are needed? Please provide examples formulas or calculations for DOER review.

For Standalone STGUS, the design of the SMART Program provides an inherent and increasingly unfair advantage to the Distribution Companies. By capping the Standalone SMART incentive at the All-in Compensation Rate, RECs generated by the STGU effectively diminish in value over time as the Value of Energy increases. As a result, the SMART Program structure allows Distribution Companies to claim ownership of RECs that they have not paid for, providing them with an unfair ability to satisfy their RPS requirements.

For Behind-the-Meter STGUs, it is sensible and logical to offer a fixed price for the SMART incentive throughout the duration of the STGUs term (essentially, a long-term REC purchase agreement). By structuring the SMART program this way for Behind-the-Meter STGUs, asset owners are able to realize value for all RECs generated by their projects throughout the 10- or 20-year SMART term. By not extending this feature to Standalone projects, the Distribution Companies are able to obtain free RECs to satisfy their RPS requirements whenever the monthly Value of Energy (which, for Standalone STGUs earning either Net Metering Credits or Alternative On-Bill Credits, is either largely or entirely out of their direct control) exceeds the SMART All-in Compensation Rate. This program feature represents an unfair giveaway to the Distribution Companies and should be amended. For additional context, nearly all established solar incentive programs in the United States (such as NY VDER, IL ABP, NJ SuSI, & MD RPS) ensure that value is rightfully earned for all RECs generated during their respective program terms.

As a proposed fix for this issue, a new rule could be implemented where whenever the monthly Value of Energy an STGU realizes exceeds the STGU's All-in Compensation Rate, the Owner of the STGU is either able to (i) elect to

retain ownership of any RECs generated during that month, or (ii) bank the RECs generated in that month to be paid by the Distribution Company at the average net SMART incentive rate (the All-in Compensation Rate minus the monthly Value of Energy) the STGU was paid throughout the previous 12-month period. This banking of RECs ensures fairness in that the Owner is paid for every REC that is generated throughout the SMART term, regardless of whether the STGU is Behind-the-Meter or Standalone.

An example of this proposed programmatic fix is shown below:

Current SMART Program Structure													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Totals
Solar Generation (kWh):	527,184	670,752	1,091,861	967,138	1,148,606	1,185,728	1,267,789	1,204,316	956,279	699,622	495,462	410,512	10,625,249
SMART All-in Compensation Rate ¹ (\$/kWh):	\$0.17420	\$0.17420	\$0.17420	\$0.17420	\$0.17420	\$0.17420	\$0.17420	\$0.17420	\$0.17420	\$0.17420	\$0.17420	\$0.17420	-
Value of Energy ² (\$/kWh):	\$0.24883	\$0.23517	\$0.17219	\$0.14324	\$0.13372	\$0.12920	\$0.14414	\$0.13939	\$0.12824	\$0.12732	\$0.15612	\$0.21293	-
Net SMART Incentive (\$/kWh):	\$0.00000	\$0.00000	\$0.00201	\$0.03096	\$0.04048	\$0.04500	\$0.03006	\$0.03481	\$0.04596	\$0.04688	\$0.01808	\$0.00000	-
SMART Incentive Revenue (\$):	\$0	\$0	\$2,195	\$29,943	\$46,496	\$53,358	\$38,110	\$41,922	\$43,951	\$32,798	\$8,958	\$0	\$297,729
Annual Average SMART Revenue (\$/kWh):	\$0.02802												-
Proposed SMART Program Structure													
Banked Generation (kWh):	527,184	670,752	0	0	0	0	0	0	0	0	0	410,512	1,608,448
Rate Paid for Banked Generation ³ (\$/kWh):	\$0.00999	\$0.00999	\$0.00999	\$0.00999	\$0.00999	\$0.00999	\$0.00999	\$0.00999	\$0.00999	\$0.00999	\$0.00999	\$0.00999	-
Value Paid for Banked Generation (\$):	\$5,268	\$6,702	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,102	\$16,072
Annual Average Banked Revenue (\$/kWh):	\$0.00999												-

1. *Modeled under National Grid (Block 11) BCR, LICSS Tranche 4 Adder, Energy Storage Tranche 12 Adder, & Greenfield Subtractor.*
2. *National Grid's published Commercial Variable Basic Service Rates (May 2023 – Apr 2024).*
3. *Average \$/kWh of SMART Incentive Revenue (\$) paid out over the past 12-month period (using current year for example).*

As shown in this example, the rate paid by the National Grid for all “banked” generation is paid at a significantly lower rate than the annual average SMART revenue under the existing program structure.

11. How could the program be designed to insulate projects and participants from unforeseen market circumstances that materially impact the value of the SMART program incentive? For example, global events impact supply chain and energy costs.

To help protect projects and participants from unforeseen market circumstances, the Department could introduce a Market Multiplier that is periodically set (annually or semi-annually). The Market Multiplier would function to balance incentive values in a constantly-changing environment. A potential data point to base the Market Multiplier on could be the Consumer Price Index (CPI). As the CPI rises or falls, the SMART incentive rate would correspondingly be adjusted. To provide guardrails on both upside and downside scenarios, the Department could implement both a floor and a ceiling to SMART incentive rates per Block.

12. What additional consumer protection measures or modifications to existing measures should the SMART program incorporate to ensure such protections are achieving their objectives, especially as they pertain to low-income customers?

With regard to Low-Income Customers participating in Low Income Community Shared STGUs, we believe it would benefit Low-Income Customers to require a fixed percentage discount from the System Owner on the bill credits they receive. Current program requirements require a demonstration of savings to a customer, but these figures can oftentimes be difficult for a layperson to understand when different subscriber organizations provide different information to customers (some may display the bill credits in the form of a rate, some may provide bill comparisons with varying escalation factors, etc.). Having a more streamlined discount (which should be set by the Department during a stakeholder engagement process) required for all Low-Income Customers that subscribe to a Low Income Community Shared STGU would make the value proposition to customers much simpler and more streamlined.

13. Are there any Commonwealth policies (e.g., renewable energy goals, land use priorities, housing policy) that you believe the SMART program inadvertently conflicts with? Please describe any potential modifications to SMART that would alleviate these conflicts.

While we recognize and appreciate the DOER's goal of balancing policy priorities with the SMART Program rules, the exclusion of significant portions of Massachusetts' land from solar development on the basis of land preservation oftentimes poses an onerous and illogical solution to a legitimate problem. Ground-mounted solar development on land previously cleared should not be excluded from the SMART Program, as these projects pose minimal impact compared to more permanent developments such as housing or commercial real estate. The fact that renewable energy facilities such as solar PV are, by and large, the only type of developments that are required to address the concerns of decommissioning (which often includes the requirement of posting a decommissioning bond), inherently supports the fact that these projects are temporary and a wholly separate type of development from more permanent structures such as housing developments or retail centers.

Aspen Power partners with landowners across Massachusetts, many of whom have held the property in their family for generations. Instead of selling their property for intensive development, we are able to preserve the vast majority of their property for 40+ years through leasing the land for solar development, allowing land to continue to be passed on to future generations.

Accordingly, we recommend that the DOER reconsider its land use restrictions in the SMART Program, specifically for land that has already been cleared.

14. Is there any additional feedback you wish to provide to DOER?

We have no additional feedback at this time.

We appreciate the opportunity to provide comments in furtherance of the Commonwealth's clean energy goals, and we look forward to participating further in the stakeholder process. Should you have any questions, please do not hesitate to reach out. You will find my contact information below.

Respectfully,

MATTHEW WHITE

MANAGER, POLICY & MARKET STRATEGY



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