Environmental Markets Association
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New Jersey 2019 Energy Master Plan ("EMP")
Clean and Renewable Energy Work Group

VIA ELECTRONIC DELIVERY October 12, 2018

Mr. Kenneth Sheehan
Director – Division of Clean Energy
Board of Public Utilities
44 So. Clinton Avenue
Trenton, NJ 08625

Re: Renewable Portfolio Standard Policy Recommendations for the Clean and Renewable Energy Component of New Jersey's 2019 Energy Master Plan

Dear Mr. Sheehan:

The Environmental Markets Association ("EMA") appreciates the opportunity to provide input to the Clean and Renewable Energy Work Group ("Work Group"). EMA applauds Governor Murphy's goal of establishing a path to 100% clean energy for New Jersey ("NJ") by 2050 and commends the Board of Public Utilities ("BPU") for its leadership in making New Jersey a national leader in renewable energy. NJ's renewable portfolio standard ("RPS") policy has been successful at incentivizing new clean and renewable energy generation since its enactment and serves as an example for other states' policymakers. We look forward to participating in this process to ensure NJ accomplishes its economic and environmental sustainability policy objectives in the most efficient and cost-effective manner.

The EMA is a U.S.-based trade association representing companies that have interests in the trading, legislation, and regulation of environmental markets. EMA was founded in 1997 as a 501(c)(6) not-for-profit organization. The members have decades of extensive, first-hand experience with market instruments related to federal and regional cap-and-trade programs in sulfur dioxide, nitrogen oxide, and greenhouse gas emissions, as well as state-driven renewable energy certificate ("REC") programs. EMA's diverse member group represents a wide variety of participants in the clean energy markets, from utilities and electricity suppliers to renewable energy project developers and investors. Our members have extensive operational experience with RPS compliance, REC trading, and renewable energy investment in several states and, collectively, have contributed to the aggregate economic investment of billions of dollars to achieve NJ's RPS. The EMA has a vested interest in the continued success of market-based mechanisms and RPS programs throughout the U.S. Given this, we believe that the EMA is uniquely qualified to share its experience with the Work Group and the EMP process that New Jersey is embarking on, especially as it relates to NJ's RPS and its continued use as the primary policy framework on the path toward 100% clean energy by 2050.

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As stated in the Clean and Renewable Power Stakeholder Discussion Points, the focus of this Work Group is on shifting NJ's energy production profile away from a reliance on fossil fuels and moving toward clean energy sources. To achieve this, NJ policymakers will be required to maintain a delicate balance between fostering a robust environment for the development of the clean energy resources it seeks, while at the same time closely scrutinizing and minimizing the cost to ratepayers. EMA strongly believes that using a market-based policy solution with competitive market elements will be the most cost-effective path toward a 100% clean energy future. As such, the EMA recommends that NJ accelerate its progress toward this goal by building upon the competitive REC market model that is successfully in place today.

To that point, EMA members are pleased to share a pair of guiding documents created by the collaboration of our experienced members: *Best Practice Principles for Renewable Energy Certificate Markets* (attached as Appendix A) and a *Supplemental Guidance Document* (attached as Appendix B). In them, EMA explains areas that are crucial to a well-functioning and efficient REC market that can maximize RPS benefits. Specifically, these principles are:

1) Tradeable Products

NJ should continue to achieve its RPS targets using tradable RECs, wherever possible. Tradable RECs allow for **accountable policy objectives**, **compliance flexibility**, and **financial innovation**[1].

2) Market-Based Pricing

NJ should allow market participants to facilitate the price discovery process for RECs wherever possible. Market-based pricing will allow for **pricing transparency**, **policy cost-effectiveness**, **ratepayer protection**[2], **information feedback signals**, and a more **diverse participant base**.

3) Market Design that Fosters Transparency, Competition, and Liquidity

NJ should continue to promote competition among all technologies and for all REC classes (NJ Class I, NJ Class II, NJ SREC, and the forthcoming "NJ SREC II" program) by maintaining all RPS obligations with electricity suppliers as opposed to electric distribution companies. NJ should avoid placing long-term contracting obligations on any electricity supplier or on ratepayers. In

[1] Financial innovation refers to the creative usage of financial instruments for commercial purposes including, but not limited to, project financing, investment certainty, risk management, and price hedging, all of which contribute to competitive outcomes that ultimately benefit ratepayers. Tradable RECs priced by vintage create reference prices for both physical and financial REC contracts (e.g. forward and futures contracts, respectively) that can be used to facilitate project investment through contracted revenue and to manage price risk. By helping to lower the risk of economic activity, or by giving market participants tools to transfer risk, the availability of financial products can lower the cost of capital for renewable resource investments. This supports lower REC prices and lower RPS costs.

[2] A significant and compelling advantage of well-designed RPS mechanisms is that they leverage private investment and utilize competitive markets to achieve the standards. For example, floating REC prices ensure that when markets become oversupplied ratepayer costs also decline. RPS policies that place obligations on electricity suppliers and use tradable RECs to incentivize and account for renewable energy targets yield many benefits to ratepayers, one of the most important being that private investors, not ratepayers or taxpayers, bear the risk of clean energy investments.

circumstances where tradable RECs may not achieve NJ's policy objectives (e.g., offshore wind), NJ should ensure that the design of a long-term contracting program does not interfere or damage the integrity of NJ's other REC classes or NJ's competitive retail supply market. Well-designed REC markets allow for **market efficiency, liquidity**, **investor certainty**, and **lower costs of capital** that support cost-effective RPS achievement.

4) Market Oversight

NJ should continue to maintain market oversight through the BPU and the use of the PJM-GATS environmental registry to collect data, report on RPS progress, and identify, monitor, and address any fraud or manipulation in the markets.

5) Market Integrity and Stability

NJ's RPS mechanism has been successful because it facilitates private investment at the risk of private investors, not ratepayers, and is designed to accommodate, not preempt, other federal, regional, and state policies. NJ should promote **Market Integrity and Stability** by maintaining the fundamental structure of its RPS to achieve 100% clean energy. Policy stability and long-term certainty is not only crucial to investor confidence and financial innovation but also for ratepayer protection.

EMA's principles and supplemental design practices encourage private market investment and result in well-functioning and efficient markets that achieve the stated goals at the most competitive price to ratepayers. EMA's REC market principles are intended to maintain the integrity of the RPS mechanism, which is extremely effective and is designed to efficiently work with NJ's retail electric choice policy.

The progress achieved by NJ's RPS policy through the use of tradeable products is undeniable and should serve as an indicator to policymakers and stakeholders to continue relying on competitive market mechanisms containing tradeable products to achieve future renewable and clean energy goals that will be part of the EMP. The following table contains a summary of key NJ RPS data:

NJ RPS Policy Overview[1]			Installation Metrics		Additionality Metrics		In-State Capacity Metrics	
NJ Renewable Energy Certificate Market	NJ RPS Targets	Tradable Instruments	NJ RPS Certified Projects (#)	NJ RPS Certified Capacity (MW)	Post 2000 (MW)	Post 2000 (%)	RPS Certified Capacity (MW)	Post 2000 (MW)
NJ Class I	50% by EY2030	Yes	201	11,575	10,695	92%	145	118
NJ Class II	2.5% Each Year	Yes	29	545	30	6%	173	0
NJ SREC	5.1% Peak	Yes	92,095	2,431	2,431	100%	2,431	2,431
NJ OREC	3,500 MW by 2030	n/a	n/a	n/a	n/a	n/a	n/a	n/a
NJ RPS Total			92,325 (#)	14,551 (MW)	13,156 (MW)	90%	2,749 (MW)	2,549 (MW)

	Eligible NJ RPS Clean Energy Production			BPU Est. Cumulative Historical Cost	
	EY2018 Minting	EY2005 Minting	Growth	Cost of Compliance (Since 2005)	%
NJ Class I	23,271,791	369,333	63.0x	$ 502,233,616	18%
NJ Class II	2,881,905	2,239,473	1.3x	$ 57,851,381	2%
NJ SREC	2,490,715	n/a	n/a	$ 2,222,693,180	80%
NJ OREC	n/a	n/a	n/a	n/a	n/a
NJ RPS Total	28,644,411 (MWh)	2,608,806 (MWh)	11.0x	$ 2,782,778,177	100%

(1) PJM-GATS Registry data downloaded 9/4/2018.

These key conclusions from this data are:

- **Scale:** NJ's RPS supports 14,551 megawatts ("MW") of renewable energy within the PJM footprint that produced 28,644,411 megawatt-hours ("MWh") of clean, verified, electricity in EY2018. NJ-certified clean energy production has seen an

11.0x increase since data became available in EY2005. RPS policy is extremely effective at ensuring large-scale capacity development in legislated timeframes.

- **Additionality:** 90%, or 13,156 MW, of NJ-certified renewable energy capacity has come online since NJ restructured its electricity market and enacted its RPS policy.

  In-State vs. Out-of-State Generation Capacity: NJ's solar renewable energy certificate ("SREC") market has supported significant in-state generation capacity. NJ's Class I REC market has mostly encouraged build outside of the state but within the PJM Interconnection region, of which NJ is a member. There has been a long-standing debate among stakeholders about the merits of procuring in-state vs. out-of-state generation through RPS policy design. This data suggests that there is an inherent trade-off in cost between incentivizing in-state and out-of-state clean energy resources. Although Class I and Class II resources now procure almost 20% of NJ's clean energy at a cumulative cost of $500 million to date, solar resources produce only 5% of the state's electricity needs at a cost of $2.2 billion to date (80% of cumulative RPS costs since enactment). In-state clean energy resources can provide additional benefits in the form of local employment, tax revenue, and grid resiliency, but these additional benefits appear to come at a higher cost and lower penetration rate than out-of-state resources. Procuring out-of-state resources, through a tradable REC market where prices have been able to respond to supply and demand, has been incredibly cost-effective in achieving NJ's RPS and protecting ratepayers. As New Jersey's RPS targets continue to increase, and the market share of in-state solar and offshore wind climb, the continued regional participation through a tradable NJ Class I REC market is crucial to containing ratepayer costs while achieving aggressive RPS targets.

- **Tradable REC Markets vs. Long-term Contracts:** There is also a long-standing debate between the use of tradable REC markets and administratively designed programs through long-term contracts or feed-in tariff policies. To date, NJ's RPS has easily achieved its targets through tradable REC markets without the need to obligate ratepayers to long-term contracts or feed-in tariffs. Although NJ has used some forms of long-term contracts as part of its RPS policy, particularly within its SREC market, these have been embedded within the overall REC markets (as opposed to the outright displacement of the REC markets). Other jurisdictions have made the mistake of sacrificing the benefits of competitive REC markets for long-term contracting programs, often at the expense of environmental and economic impact. It is also useful to note that well-designed RPS programs with tradable RECs already facilitate forward contract markets and bilateral long-term purchase agreements. Today, NJ's RPS facilitates a robust forward market for its participants.

EMA believes that NJ's RPS accomplishments would not have been possible without the reliance on, and oversight of, a competitive REC-based marketplace. Looking ahead, EMA encourages policymakers to "place greater reliance on competitive markets, with the explicit goal of encouraging and ensuring the emergence of new

entrants that can foster innovations and price competition."[3] More specifically, EMA offers the following recommendations to improve NJ's RPS policy and its competitive REC markets:

1) Remove all percentage-based cost cap provisions in all years from NJ'S RPS. In well-designed REC markets, alternative compliance payment schedules should be the *only* form of cost containment. This is an extremely important concept for policymakers to understand. The RPS mechanism is designed to facilitate private investment which is, in part, recovered by future REC cash flows. Alternative Compliance Payment provisions serve an important purpose in that they protect ratepayers from excessive cost from infinite pricing in an undersupplied market while providing developer and investors certainty into the price range in which RECs can trade. Percentage-based cost caps stifle market liquidity and make it harder to raise project finance, which increases the cost of capital to build new projects and ultimately ratepayer costs. This is not a theoretical concept. Today, NJ's percentage-based cost caps are negatively impacting liquidity and are creating a great deal of uncertainty over future NJ Class I REC demand, which fundamentally weakens the RPS in a way that deters private investment in new generation capacity. Private investment in generation capacity drives the environmental, economic, and social benefits that the RPS policy seeks. This provision runs counter to RPS objectives.

2) Establish RPS percentage schedules in a timely fashion as forward looking as possible. A long-dated and transparent schedule is essential to price discovery, market transparency, and liquidity. Long-term schedules give producers and compliance buyers information they need to develop and purchase renewable energy.

3) Maintain and preserve the integrity of the current Class I ACP rate. It is important to recognize that sufficiently high and stable ACP rates provide the market the proper signals to encourage investment and incentivize new projects. This provision is fundamental to the creation of a tradable and liquid market.

4) In implementing the 3,500 MW Offshore Wind carve out, do not reduce NJ Class I REC demand until a project has become commercially operable and is producing RECs. This will ensure RPS integrity, by ensuring that if a project awarded a long-term contract is delayed, the RPS is still procuring RECs (and therefore the benefits of those attributes) from market participants on an annual basis. Change the Offshore Wind ACP mechanism to require Tier I RECs in-kind before any ACP payment can be made.

5) Implement an open and tradable NJ SREC II program as a successor to the NJ SREC program. As stated in the Clean Energy Act of 2018, policymakers are encouraged to implement its responsibilities in such a manner as to "…place greater reliance on competitive markets, with the explicit goal of encouraging and ensuring the emergence of new entrants that can foster innovation and price competition." (citation – section "L1") Indeed, EMA encourages NJ to build on this

[3] This language is cited from S2314 / A3723 lines 14-16 in the context of this bill's legislative directive to the BPU in designing NJ's successor solar program. The EMA feels that this principle should be usefully applied to the entire RPS.

record of competitive success and asks the BPU to consider its Best Practice Principles for REC markets when designing this program. We also ask that if any long-term contracting provisions are to be used, that they maintain a similar structure to the NJ SREC II-based financing program and do not displace the SREC demand mechanism. The successor program should be structured similarly to the current, successful, SREC program and RPS obligations should remain on suppliers in the form of SREC purchases.

6) Explore how the RPS policy can evolve to support grid resiliency and technologies such as cogeneration and energy storage through tradable environmental commodities.

As federal policy changes, such as through the expiration of tax incentives for renewable energy investments, a policy that has been essential to supporting renewables growth in the region, the policy actions of NJ and that of its fellow member states in the PJM region will become even more important. It is imperative for policymakers to understand that when federal subsidies for renewable energy expire or weaken, there must be robust market mechanisms in place to ensure that NJ will be able to cost-effectively support NJ's clean energy targets. Failing to make sure competitive markets remain in place for the achievement of these RPS goals will create substantial risk to NJ ratepayers in the future.

Thank you for your consideration of our comments. The EMA is ready to offer any additional assistance as needed by the BPU as New Jersey moves towards its clean energy future.

Sincerely,

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Appendix A – Best Practice Principles for Renewable Energy Certificate Markets

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Best Practice Principles for Renewable Energy Certificate Markets

The Environmental Markets Association (EMA) is focused on promoting market-based solutions for environmental challenges through sound public policy, industry best practices, effective education and training, and member networking. EMA represents a diverse membership including large utilities, renewable energy certificate (REC) traders and brokers, financial exchanges, law firms, project developers, investors, consultants, academics, non-governmental organizations, and government agencies. EMA strongly supports the utilization of markets to achieve environmental policy goals. Well-designed markets yield many benefits including, but not limited to, transparent price signals determined through competition, risk mitigation opportunities, incentives for technological innovation, efficient allocation of capital and resources, investor certainty, and ratepayer protection. In support of RPS objectives, EMA endorses the following set of Best Practice Principles for REC Markets:

EMA Best Practice Principles for REC Markets

1. **Tradable RECs**
2. **Market-Based Pricing**
3. **Market Design That Fosters Transparency, Competition, and Liquidity**
4. **Market Oversight**
5. **Market Integrity and Stability**

In the case of Renewable Portfolio Standards (RPS), EMA believes that market-based programs will enable the most cost-effective, flexible, and innovative approach to maximizing renewable energy. EMA further believes that this is best accomplished through open, transparent, and competitive markets, and the use of tradable RECs as the primary means of RPS compliance. As such, well-designed RPS policies and REC markets offer stakeholders many advantages toward achieving their economic, social, and environmental objectives:

EMA RPS Advantages from Best Practice Principles

- ✓ **Accountable Policy Objectives**
- ✓ **Pricing Transparency**
- ✓ **Compliance Flexibility**
- ✓ **Policy Cost-Effectiveness**
- ✓ **Ratepayer Protection**
- ✓ **Market Integrity & Stability**
- ✓ **Investor Certainty**
- ✓ **Information Feedback Signals**
- ✓ **Market Efficiency & Liquidity**
- ✓ **Financial Innovation**
- ✓ **Lower Costs of Capital**
- ✓ **Diverse Participant Bases**

For additional information about these Best Practice Principles for Renewable Energy Certificate Markets and their RPS advantages, please view our Supplemental Guidance Document for REC Markets here.

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Appendix B – Supplemental Guidance Document

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Supplemental Guidance Document
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1. Tradeable RECs

- EMA supports the use of tradeable RECs for renewable portfolio standard (RPS) compliance. Clearly defined tradeable RECs (e.g., by vintage period, useful life, resource and compliance eligibility) provide a means for facilitating commercial transactions through bilateral markets that enable participants to trade RECs on the spot market (for immediate delivery) and in the forward market (for future delivery). Spot markets facilitate the monetization of RECs. Forward markets facilitate the management of risk. Bilateral REC markets occur when participants trade directly among each other outside of a centralized procurement or auction process. RECs obtained at auction can be later resold through bilateral markets.
- Tradable RECs allow for market participants, who may not have entitlements or compliance obligations, to provide market liquidity and risk management services to those entities with future entitlements to the product (e.g., renewable resource developers) and to those entities with future compliance obligations (e.g., load-serving entities).
- Open and competitive REC markets attract a more diverse participant base, which in turn increases market liquidity. For renewable resource developers, this translates into more counterparties to purchase RECs. For compliance entities, this means more flexibility to procure RECs at times, and in volumes, that match RPS obligations. For all market participants, this results in more avenues to meet specific transactional needs and credit requirements. Open and competitive markets are essential to creating efficient REC price discovery and liquid trading on a forward basis (i.e., for future compliance vintages).

2. Market-Based Pricing

- EMA supports the price discovery of RECs through market-based mechanisms as opposed to the assignment of prices through administrative processes by government agencies. Collectively, REC trading participants will always have access to more information through markets. As such, the formation of REC prices should be driven by information and competition that accounts for the economic and risk preferences of market participants.
- Market-driven REC prices provide transparent and dynamic economic signals to participants for investment and resource allocation decisions. This enables efficient compliance by helping participants to dispatch the lowest cost solutions that fulfil the RPS.
- RPS design that allows for "floating" REC prices that can respond in real-time to new information is an important concept. Allowing prices to adjust in real-time to changes in supply and demand and other existing policies (e.g., the Public Utility Regulatory Policies Act, net energy metering, and tax law) guides

the market towards the most cost-effective achievement of RPS objectives. Benefits include ratepayer protection and the establishment of reference prices for financial innovation:

- Ratepayer Protection – While high REC prices are a signal to invest, low REC prices are a signal to slow the development of new resources vs. current RPS targets established by law. Allowing prices to fall when renewable technologies become cheaper, when other policy-based incentives are at play, or when markets become oversupplied is critical to protecting ratepayers from unnecessary or irresponsible investment and forces market participants to be more thoughtful about expenditures, risk management, and resource allocation. If investments exceed stated regulatory targets, or are negatively impacted by company governance or exogenous market factors, ratepayers are protected from investment losses. This supports overall market efficiency.
- Financial Innovation – Tradable RECs priced by vintage create reference prices for both physical and financial REC contracts (e.g., forward and futures contracts, respectively) that can be used to facilitate project investment through contracted revenue and to manage price risk. By helping to lower the risk of an economic activity, or by giving market participants tools to transfer risk, the availability of financial products can lower the cost of capital for renewable resource investments. This supports lower REC prices and lower RPS costs.

- Generally, the more compliance entities, producers, market makers, and financial participants that take part in a market, the more effective that market will be in facilitating price discovery, price transparency, market liquidity, and the efficient allocation of resources. Centralized compliance obligations with a single entity or a small group of entities should be avoided, if possible, to decrease the risk of market manipulation and increase market liquidity. Likewise, central procurement mechanisms that do not take advantage of the benefits from competitive market participation should be avoided or minimized.

3. Market Design That Fosters Transparency, Competition, and Liquidity

- Transparency, competition, and liquidity are mutually reinforcing market phenomena that will help promote the cost-effective achievement of RPS policies. The more cost-effective resources become at fulfilling RPS targets, the higher that RPS targets can be set without adversely impacting ratepayers.
- EMA supports market design features that create transparent and reliable price signals capable of facilitating market or auction objectives that channel RECs to participants who most highly value them.
- RPS design components should ensure that all participants have both an incentive and interest to ensure that efficient price discovery occurs and is revealed to the market in a timely and transparent manner.

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- If design components include features such as price boundaries, such as alternative compliance payments (ACPs) or price floors, such features must be transparent to market participants on a forward-looking basis, must facilitate competitive market outcomes, and must support the integrity of the market. Statutory price floors in and of themselves will not necessarily support pricing or liquidity in an oversupplied market without an additional back-stop mechanism or capitalized facility.
- EMA supports market design that enables diverse participation and competition in environmental markets, since a competitive market reduces liquidity risk and ensures that no one entity can unduly influence the market.
- Any regulation should be carefully evaluated as to its impact on market liquidity, transparency, competition, and costs to participants. EMA does not support efforts to limit participation in REC markets or REC auctions to only those entities with compliance obligations.

Key RPS Design Components and REC Market Features	
RPS Component	**REC Market Feature**
REC Tier / Class Product Definitions	▪ REC tier / class product definitions include technology type, generator vintage (i.e., online) eligibility dates, and other environmental attribute considerations. ▪ REC tiers within an RPS should be clearly defined to distinguish between existing and new entry renewable resources, which may require different revenues to adequately account for different cost-recovery rates. ▪ Each REC tier will have its own distinct REC market if it has a unique ACP schedule and requires obligated entities to fulfill compliance targets with REC purchases. Although REC tier pricing may be influenced indirectly by other REC markets in jurisdictions that have resource eligibility overlap, it will exhibit unique supply / demand fundamentals and price signals to market participants. ▪ If separate RPS tiers are created to support less commercialized technologies, or to accelerate already commercialized technologies that provide unique RPS benefits, these tiers should be additional to other technology tiers and each tier should deploy best practice market design principles if possible and cost-effective. ▪ REC standard of units (e.g., megawatt hours of power generation per single REC issuance) should be clearly defined and to the extent possible, standardized with adjacent RPS jurisdictions. ▪ REC tiers should be clearly defined as to whether they are carve outs of another tier, or a set aside (an additional, cumulative, target) within the overall RPS.
Vintage Periods	▪ Vintage period should be clearly defined in regard to the span of dates in which generation from an eligible resource can issue a compliance-eligible REC for use in a particular compliance year(s). Calendar Year and Energy Year is common. ▪ Vintage-based compliance periods ensure RPS policy accountability through periodically verified REC retirements (annual retirements are encouraged).

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Compliance Eligibility	▪ REC tiers should be clearly defined in regard to which resources can generate compliance-eligible RECs for compliance. ▪ Compliance-eligible REC vintages for a given reporting year (e.g., RY2018) should also be clearly defined (this is often referred to as REC banking or useful life). ▪ Compliance due dates for REC retirements should be clearly posted and have administratively straightforward reporting processes. ▪ ACP payments should be required in a timely manner following the end of an RPS compliance requirement year.
Resource Eligibility	▪ Broad RPS technology eligibility among a diverse array of clean energy technologies is encouraged. ▪ The more technologies that are RPS eligible, the greater the number of potential REC producers in a market and the greater the competitive pricing benefits (e.g., economic and employment) across multiple industries. Allowing multiple technologies to compete for grid access also supports electrical grid fuel diversity and resiliency. ▪ Resource eligibility has an extremely high impact on the supply / demand fundamentals of a REC tier and therefore a high impact on whether a market exhibits low or high REC pricing vs. the ACP schedule. ▪ The number of vintage periods a generator is certified to issue RECs for RPS compliance within a particular REC tier (sometimes referred to as "qualification life"), should be clearly defined in advance, even if only to confirm that no vintage eligibility limitations apply to RECs issued by RPS certified generators. ▪ Generator vintage eligibility (the date in which a generator is considered to have come on line for the purposes of an RPS) should be clearly defined for each REC tier within an RPS.
Geographic Eligibility	▪ Geographic, or jurisdictional, eligibility of renewable resource generators should be clearly defined for each REC tier. A narrow definition of geographic eligibility is in-state located resources. A broad definition is national eligibility. Variations exist for adjacent state and regionally located resources. ▪ Geographic eligibility has an extremely high impact on the supply / demand fundamentals of a REC tier and therefore a high impact on whether a market exhibits low or high REC pricing vs. the ACP schedule. ▪ REC import eligibility (with or without the energy transfer) has an extremely high impact on the supply / demand fundamentals of a REC tier and therefore a high impact on whether a market exhibits low or high REC pricing vs. the ACP schedule.
Fixed RPS Compliance Targets and Forward-Looking RPS Schedules	▪ First, RPS compliance schedules should be fixed at pre-set percentage levels of retail electricity sales in advance of compliance years. EMA recommends that RPS targets (and therefore compliance action) step up annually according to a pre-set schedule that is transparent to market participants. Percentage-based targets ensure that REC demand is responsive to load variation, which provides an additional cost-containment mechanism to ratepayers in the event of load decline or ensures that as load grows so does the mix of renewable resources and associated clean energy benefits.

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	▪ Second, RPS compliance year schedules should have tenor (i.e., be transparently established as far into the future as possible) to support long-term market and investment certainty. This creates transparency and is important to enabling tradability and investor confidence. ▪ Third, RPS target terminal years (sometimes referred to as sunset language) should be clearly defined. Terminal year RPS targets should always be maintained at their final levels (i.e., the procurement percentage should not drop down to zero or begin to decline once achieved) to ensure that RECs generated from investments post the last compliance year can continue to be sold and delivered to compliance entities and that the overall penetration of renewables in the electricity mix continues to comply with the law. ▪ Fourth, under no circumstances should a compliance year's RPS target ever be set lower than any previously established compliance year target.
Fixed Alternative Compliance Payment (ACP) Rates and Forward-Looking ACP Schedules	▪ ACP mechanisms are a pre-requisite for REC market trading and timely, accountable, RPS compliance, since they create penalties on obligated entities for failing to procure and retire RECs. ▪ ACP rate schedules should be forward-looking and align with the RPS compliance year schedules (on a vintage-by-vintage basis) to support long-term market certainty. This creates transparency and is important to enabling investor confidence, a lower cost of capital, and cost-effective RPS achievement. ▪ ACP rates should be fixed and set at sufficiently high enough levels that both encourage renewable energy investment and market tradability / liquidity. High ACP rate schedules should not be interpreted to imply high RPS compliance costs. ▪ Whenever possible, ACP rates should be set at levels which reflect regional circumstances to address REC shuffling / attrition between RPS jurisdictions. ▪ ACP payments should also be required after each compliance year and payments should be required in a reasonable timeframe. ▪ Non-published ACP schedules, or opaque formulas pegged to complicated calculations or market pricing, creates market uncertainty and should be avoided. ▪ ACP rates should be the only cost-containment mechanism built into an RPS. Other forms of cost-containment mechanisms, such as when an RPS freeze is tied to electricity price increases beyond a certain percentage threshold create considerable investment uncertainty and should be avoided. ▪ Reductions to ACP schedules post establishment is strongly discouraged. If ACP schedules are adjusted downward, considerable thought should be given as to the lower ACP schedules impact on pre-existing investments and forward sale REC contracts (which may become invalidated by change-in-law provisions). ▪ The general use of ACP proceeds should be disclosed to market participants. Policymakers that want to limit the impact of ACP payments on ratepayers can implement a pro-rata bill credit based on total ACP proceeds to ease RPS costs in short supplied markets.
Applicable Electricity Sales and Exemptions	▪ Applicable retail sales, exemptions, and the obligated entities required to procure for RPS compliance should be clearly defined.

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	▪ Generally, electricity exemptions, which reduce total applicable retail sales applied to RPS requirements, weaken demand for renewable resources, may create uncertainty in calculating REC demand, and may mislead the public about published RPS targets.
REC Banking (Useful Life)	▪ Clearly defined banking of RECs (useful life) is encouraged. Banking of RECs helps facilitate a more efficient market by ensuring that RECs issued in previous years maintain value long enough for participants to transact them. o For producers, this gives them the option to hold RECs into fundamentally short years, which defers current cashflow in exchange for the potential to earn a higher price later. o For compliance entities, this gives them the opportunity to bank lower cost RECs from oversupplied years into fundamentally undersupplied years, thereby providing the option to manage their compliance costs in response to the market environment or specific capital / credit constraints.
REC Multipliers, Factors, and Forward Crediting (Borrowing)	▪ Multipliers provide higher incentives to projects through awarding each megawatt hour of generation a greater proportional amount of RECs. All else equal, this increases the amount of revenue a project receives for the same unit of production, but dilutes published RPS targets and may lower REC pricing through increased supply. The use of REC multipliers should be weighed against the potential for market distortion and decreased market liquidity. ▪ Factors provide lower incentives to projects through awarding each megawatt-hour of generation a lower proportional amount of RECs. All else equal, this lowers the amount of revenue a project receives for the same unit of production. Factors have the potential to create economic attribute waste (i.e., clean energy generation that does not count towards RPS achievement but still provides environmental benefits) if the non-factor proportion of generation cannot issue other RECs saleable for RPS compliance. REC factors should be avoided if they apply to the main, or overarching, tier of an RPS. ▪ Multipliers and factors must be considered carefully as they have wide ranging impacts on different project segments (e.g., utility, commercial, residential). If implemented improperly, they can distort market pricing and make the market allocate capital less efficiently, meaning power purchasers (and ultimately end-users or ratepayers) pay more for electricity. In practice, this can cause expensive projects to deploy at the expense of economically more efficient new entry units (for example, smaller but higher cost projects which have access to net energy metering at retail rates vs. larger but lower-cost projects with economies of scale that must compete in the wholesale markets). Multipliers can end up weakening overall RPS targets if implemented poorly. ▪ Forward Crediting, or the borrowing of RECs from future production periods that can be sold today, distorts market pricing and should not be deployed in any environmental market. Since REC issuance and cashflow would occur upfront with forward crediting, this decreases the incentive to maintain the project and increases the risk that the project will not deliver its RECs for future RPS compliance. Forward crediting runs the risk of creating an artificially

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	oversupplied REC market with lower prices that subsequently damages the investment signal participants require to develop new resources.
Long-term Contracting Programs	▪ Tradable RECs and long-term contracting programs can successfully coexist; however, long-term contracting programs should not be legislated in replacement of, or at the expense of, open and competitive tradable REC markets that go above and beyond the designated contract volumes in the long-term contracting programs. ▪ Long-term contracting programs that award a REC offtake contract in advance of when a generator comes online should make sure that adequate financial security is posted until the project comes online. This will discourage bidders from bidding into procurements with unrealistic economic assumptions that tie up scarce resources (i.e., contract awards) that may prevent other, more viable, projects from being developed.
RPS Reporting	▪ RPS compliance reports should be written and released to the public for each requirement year on a timely basis. Wherever possible, RPS compliance reports should provide sufficient data (e.g., on applicable retail electricity sales and exemptions, RECs retired, RECs banked forward, etc...) that is helpful to participants in assessing the status of the RPS and its REC markets.
Interaction with Compliance Carbon Cap-and-Trade Programs	▪ REC markets and carbon allowance / carbon offset markets can coexist in the same jurisdictions. Current best practice keeps fungibility separate (i.e., RECs cannot be used for carbon market compliance and carbon allowances / carbon offsets cannot be used for RPS compliance). Clear and thoughtful definitions of which environmental attributes are embodied by each environmental commodity can help eliminate confusion between market participants and regulators while promoting market liquidity.
Private Investment	▪ Market design should foster private investment and market participation. ▪ Leveraging private investment and capital markets in achieving RPS policy is important. Well-designed RPS policies and competitive REC markets will shift investment risk away from ratepayers or taxpayers to private investors. If a project fails, it does not receive cost-recovery through REC payments (because it does not generate any RECs). If a project receives a lower investment return because of overly optimistic REC price forecasts, ratepayers are shielded from this economic miscalculation.

4. Market Oversight

- EMA supports clearly-defined independent market oversight, with stakeholder input, to maximize the benefits of competitive commercial behavior in achieving policy goals and providing transparency, while guarding against fraud and manipulation and minimizing systemic risk. Successful RPS design must include measures that protect the market from activity that is illegal or detrimental to the market's function.

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- EMA supports independent oversight of the market structure and operation, which may include periodic review, and as needed, recommendations with stakeholder input for addressing any identified market design flaws.
- Over-the-counter spot and forward REC contracts currently qualify for the forward exclusion definition of a "swap" under the Commodity Exchange Act (CEA) if intended for physical delivery. As such, RECs are classified as non-financial commodities by the Commodity Futures Trading Commission (CFTC) and regulated accordingly under the CEA. Financial REC futures and options contracts are regulated by the CFTC and must trade on an approved commodity exchange.

5. Market Integrity and Stability

- RPS laws, regulations, and regulatory guidance documentation should strive to maintain the integrity of REC markets and RPS policy in all aspects. Long-term regulatory and policy certainty will allow a robust market-based system to evolve with healthy price discovery and liquidity. Flawed market design rules, even minor ones, can have a harmful impact on market liquidity and increase RPS compliance costs. When establishing and enforcing local preferences (e.g., resource eligibility, generator vintage eligibility, biomass emissions limits) regulators should be careful not to interfere directly with a market's price discovery process. RPS frameworks mobilize private investment that generates environmental and economic benefits. Long-term certainty and stability in the political institutions can help lower the cost of capital by instilling integrity in the regulatory commodity.
- Frequently changing rules creates investment uncertainty and can stifle market development. Regulatory policy changes that are applied retroactively to a market (such as the lowering of an ACP schedule once established or the retroactive decertification of previously qualified RPS generators) damage investor confidence and should be avoided. Vague or ambiguous regulatory language also damages investor confidence, all of which increases the cost of capital for renewable energy investments.
- High, low, or volatile REC pricing, at points in time, should not be interpreted as a sign of market failure. Prices, in essence, represent information. In competitive tradable markets, when information changes, prices change. Indeed, price fluctuations are an indication of a healthy market that is responding to information and adjusting to changing operating conditions. When RPS policies are well-designed, high REC prices will encourage the development of new renewable energy resources that in turn eventually lowers market pricing and vice versa.

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- Tradable RECs support accountable policy objectives and information transparency by ensuring that RPS achievement is measured, tracked, and reported on in a timely manner. EMA supports the usage of secure and robust tracking mechanisms and methodologies to provide certainty of REC ownership. Well-implemented REC registry systems will avoid double counting of RECs and the dilution of RPS benefits. Failure to implement a system to track ownership of environmental compliance products can undermine the success of the market. Developing such registry mechanisms and methodologies must be a part of the market design process and must be completed prior to implementing any new REC market. Any issues with attribute ownership, claims of benefits, or means of tracking the RECs must be clarified before the start of any program. Failure to do so can greatly undermine confidence in the market, stifle liquidity, and hinder the program's full potential of benefits.
- EMA supports legislative, regulatory, and rulemaking efforts to establish stable, clearly-defined, and transparent market regimes. EMA promotes the inclusion of experienced market participants at all stages of the development process and post-implementation market review process in order to contribute to the overall strength and vibrancy of the markets. Both the design process and the post-implementation review process must be transparent to all stakeholders.
- Maintaining market integrity is the responsibility of both market participants and regulators.

About EMA

EMA is a U.S.-based trade association representing the interests of companies that are involved in the trading, legislation, and regulation of environmental markets. EMA was founded in 1997 as a 501(c)(6) not-for-profit organization. Our members have decades of extensive, first-hand experience with market instruments related to Federal and regional cap-and-trade programs in SO2, NOx, and GHG emissions as well as state-driven RPS programs throughout the U.S. The EMA represents a wide variety of participants in the clean energy markets, from utilities and load-serving entities to renewable project developers and investors. EMA members have extensive operational experience with RPS compliance, REC trading, and renewable energy investment and, collectively, have made significant historical contributions to achieving state RPS targets. The EMA has a vested interest in the continued success of market-based mechanisms and RPS programs throughout the U.S. and encourages active discussion and collaboration among all industry participants. Inquiries about the EMA, or these Best Practice Principles for REC Markets may be directed here.