

WHAT ARE RENEWABLE ENERGY CERTIFICATES?

By Jeremy D. Weinstein

Jeremy D. Weinstein, of the Law Offices of Jeremy D. Weinstein, P.C., is a lawyer in Walnut Creek, California. He has been at the forefront of environmental commodity markets, including infrastructure development, creating form documentation, and California legislation and regulation, for more than 25 years. He has law degrees from the University of California and Trinity Hall, Cambridge University.

Email: jweinstein@jweinsteinlaw.com and website <http://jweinsteinlaw.com>. I gratefully acknowledge the review, comments, recommendations, critiques, and encouragement of Christopher Berendt, Dickson Chin, Liz Ferrell, Geoff Hefernan, Stacey Kusters, Michael Loenen, Ginger Price, Bobby Singh, and Chris York. I especially thank Todd Jones of Center for Resource Solutions for his substantial contribution to the second half of this article. I take sole responsibility for all content.

INTRODUCTION

Generating energy with renewable resources, instead of using fossil fuel resources or otherwise, is a behavior. That behavior, and the resulting renewable energy, have “attributes.” These are “environmental attributes” of renewable energy generation. Some or all of these environmental attributes can be bundled together through contract, law or regulation into an environmental commodity commonly

called a Renewable Energy Certificate (REC).¹

RECs are not monolithically uniform. Different states and regions of the U.S., and private contracts, differ as to the environmental attributes included in a REC. Environmental attributes fall in overlapping subsets, and each subset has some elements that are set in stone, and some elements that get debated. One subset is the right to make claims about the renewable energy, including to have caused it to have been brought to the electric grid. Another subset is the renewable energy nature of the fuel used for renewable resource generation, such as zero emissions solar or wind, or biomethane rendered a net zero emissions fuel by application of a quantity of carbon offsets. Another is the zero emission signature of the generated renewable energy itself, which includes reporting it as such to regulators. Yet another is the avoidance of fossil fuel generation through use of renewable energy generation, which includes questions of by whom and by how much. Different strands within each subset occur at different points along a long chain stretching from contractual commitment to generate through covenants following regulatory or voluntary reporting long after generation.

RECs can be certificated, and transferred separately from the associated energy, using an electronic system that tracks the quantity of net renewable generation.

That electronic tracking system is commonly called a “generation information system” (GIS).² Each GIS has operating rules that establish, in a definition of “Certificate,” which of the environmental attributes of the renewable energy and the behavior of generating the renewable energy are represented by the Certificate. The certification of the “environmental attributes” embodied in the definition of “Certificate” in the applicable GIS can be transferred in the GIS between a buyer’s and a seller’s GIS accounts.

The environmental attributes are also transferred by contract, and if a GIS is not available, usually also by a paper certificate called an “attestation.” RECs are more than a GIS Certificate or paper attestation. Some states have laws and regulations that define RECs, that say which attributes are included in RECs, and provide whether and which GIS Certificates can be used for compliance programs. RECs transferred with the underlying energy are generally called “bundled RECs.” RECs sold separately from the underlying energy are generally called “unbundled RECs.” When a REC is unbundled and sold separately, the associated energy then becomes undifferentiated “null” or “brown,” i.e., not “green” or “renewable” energy.³

Unbundled RECs provide a way for those who want the “renewability” of energy from a renewable resource, but cannot directly connect to the renewable resource, to buy it. For example, the New York Power Authority used RECs to bring renewable energy to the Freedom Tower.⁴ REC transactions can be in voluntary markets (for example, companies that want to demonstrate a commitment to the environment) and in compliance markets (for example, utilities that must comply with a legal requirement to use a

minimum amount of renewable energy, commonly known as a renewable portfolio standard (RPS)).

Parties trading RECs must grapple with multiple and overlapping federal, state, and contract legal structures that can make a REC far more than a simple and fungible compliance instrument, tradable as the GIS Certificate. The GIS Certificate is a final output of a process at the tracking system that takes place after renewable energy generation. RECs are defined by statutes, regulations, contracts, voluntary standards, and GISs, as containing varying collections of the overlapping subsets of environmental attributes noted above. The GIS Certificate and its transfer are not the entirety, but merely components, of a RECs sale and purchase transaction.

Understanding the legal nature of RECs is critical for existing and future state and federal renewable energy and greenhouse gas regulation, as well as for parties transacting in RECs. RECs exist and are defined by multiple state and federal laws and regulations, GISs, and in contracts through which companies buy and sell RECs as property. Future legislation and regulation should be mindful of these structures and avoid disrupting them, as doing so would interfere with achievement of shared policy goals, as well as with private property rights. For example, as will be discussed in depth below, under the Clean Power Plan, the Environmental Protection Agency (EPA) recognized that its “Emission Reduction Credits” could lead to conflicts among different state REC definitions, with private contracts, and with other federal regulations of RECs, and left the conflicts unresolved. Separately, the recently tabled CLEAN Future Act⁵ contemplated tradeable “clean energy credits”

under a baseline-and-credit framework that did not seem to account for RECs or the rights of private parties under existing REC contracts.

REC CONTRACTING

REC transactions are not as simple as transferring title to a GIS Certificate and moving it between accounts on a GIS. REC trading agreements are often highly customized, and industry-sponsored form trading agreements, while popular, do not have the marketplace permeation of many other industry standard forms for their respective commodities. However, even when not applied in their entirety, standard forms that make available transaction tools for REC market participants generally help make REC markets more useful and liquid.

This article is prompted by an International Swaps and Derivatives Association (ISDA) initiative to develop REC trading documentation as a supplement to the ISDA/EEI⁶ U.S. North American Power Annex. The ISDA initiative is being admirably piloted by my friend and colleague Dickson Chin of Jones Day, and I have every confidence that he will guide the initiative to an excellent work product. Other industry groups have published form REC trading agreements. These include the Edison Electric Institute's RECs Annex to its Master Agreement,⁷ the Environmental Markets Association/American Bar Association/American Council on Renewable Energy ad hoc working group's Master Agreement,⁸ and the WSPP Agreement Schedule R.⁹ The North American Energy Standards Board is developing a form of master trading agreement for non-GIS Certificate RECs.¹⁰ The Edison Electric Institute is also developing a REC spot trading agreement,¹¹ and is indirectly coordinating with ISDA's initiative.

A full understanding of the legal nature of RECs is crucial to creating and using a useful industry standard REC trading document. As ISDA documentation forms are generally readily accepted by the marketplace, understanding the legal nature of RECs will help those seeking to use standardized REC trading documentation. A standard form does not by itself teach everything one should know about a REC and trading it. Contracting parties and policymakers exploring market-based solutions to promote renewable energy and combat climate change¹² will benefit from understanding the robust, highly developed network of definitions, statutes, regulations, and tracking system infrastructure that is already in place.

WHAT ARE RECS?

RECs are environmental commodities, and are very different from other fungible commodities, such as gold or wheat. RECs package up some or all of the "attributes" of renewable energy and the behavior of generating renewable energy, through GIS operating rule "Certificate" definitions, contract language, and statutes and regulations.

FEDERAL DEFINITIONS AND REGULATION

Federal regulators recognize property rights in RECs, and RECs as personal property. According to the principal federal energy regulator, the Federal Energy Regulatory Commission (FERC), RECs are "products" (not "services") that are "delivered" (not "performed") when sold,¹³ and are property that is owned, traded, and sold.¹⁴ FERC determined that unbundled RECs are outside its jurisdiction, and bundled RECs are

within its jurisdiction.¹⁵ Other U.S. government departments define RECs as property. The Department of Justice prosecuted theft of RECs as part of a scheme to defraud to obtain money and property,¹⁶ and a Department of Defense adjudication ruled that RECs are personal property.¹⁷

According to the principal federal environmental regulator, the EPA

RECs are used to demonstrate compliance with state [renewable energy] targets, such as state RPS, and also to substantiate claims stemming from [renewable energy] use. RECs are tradable instruments that are associated with the generation of one megawatt-hour of [renewable energy] and represent certain information or characteristics of the generation, called attributes. RECs may be traded and transferred regardless of the actual energy flow. The legal basis for RECs is established by state statutes and administrative rules.¹⁸

and

A renewable energy certificate, or REC (pronounced: rek), is a market-based instrument that **represents the property rights to the environmental, social and other non-power attributes of renewable electricity generation.** RECs are issued when one megawatt-hour (MWh) of electricity is generated and delivered to the electricity grid from a renewable energy resource.¹⁹

and

A renewable energy certificate - REC (pronounced: rek) is a tradeable, market-based instrument that represents the legal property rights to the “renewable-ness”—or non-power (i.e., environmental) attributes—of renewable electricity generation. A REC is created for every megawatt- hour (MWh) of electricity generated and delivered to the grid from a renewable energy resource. Electricity cannot be considered renewable without a REC to substantiate its renewable-ness.²⁰

The key word in each of these definitions is “attribute.” Webster’s Encyclopedic Unabridged Dictionary of the English Language defines “attribute” as:

at•trib•ute (v. ?#153; trib yōōt; n. a tr?#153; byōōt), v., **-ut•ed**, **-ut•ing**, n.—v.t. 1. to regard as resulting from; consider as caused by (usually fol. By to): *She attributed his bad temper to ill health.* 2. to consider as belonging, as a quality or characteristic: *He attributed intelligence to his colleagues.* 3. to consider as made by, esp. with strong evidence but in the absence of conclusive proof: *To attribute a painting to an artist.* 4. To regard as produced by or originating in or with; credit; assign: *To attribute a work to a particular period; to attribute a discovery to a particular country.* -n. 5. something attributed as belonging; a quality, character, characteristic, or property: *Sensitivity is one of his attributes. . . .²¹*

Merriam-Webster Dictionary online defines “attribute” as meaning, when a noun, “1: a quality, character, or characteristic ascribed to someone or something / *has leadership attributes*; 2: an object closely associated with or belonging to a specific person, thing, or office / *a scepter is the attribute of power*, especially: such an object used for identification in painting or sculpture; 3 *grammar*: a word ascribing a quality, esp. adjective,” and as a transitive verb: “1: to explain (something) by indicating a cause / *He attributed his success to hard work*; 2a: to regard as a characteristic of a person or thing / *should not attribute adult reasoning to children*; b: to reckon as made or originated in an indicated fashion / *attributed the invention to a Russian*; c: classify, designate.”²²

Black’s Law Dictionary defines “attribute” as “A quality or feature, usu[ally] one considered to be good or useful.”²³ Renewable energy and the behavior of generating renewable energy have

“attributes,” some or all of which are commodified into property and transferred via RECs.

According to the principal federal commodities regulator, the Commodity Futures Trading Commission (CFTC), environmental commodities, including RECs, are “non-financial commodities.”²⁴ The CFTC found that environmental commodities as intangible commodities that are capable of physical delivery and that “can be consumed”²⁵ qualify as nonfinancial commodities, and that straightforward sales of environmental commodities settled by transfer, such as RECs transferred using a GIS, are not swaps, but rather excluded forward contracts.²⁶ Physically settled environmental commodities, including RECs, are subject to CFTC antifraud and antimanipulation rules.²⁷ State renewable energy compliance programs often require “permanent retirement” of RECs used for compliance on a GIS,²⁸ and that retirement “consumes” the REC and prevents it from being used again in another context or in a different program. **Claims** of protecting the environment through promoting the social benefit of generating the renewable energy, such as a press release by a company stating that it is buying renewable energy from the Acme Wind Farm II to provide power its data center, also “consume” RECs.²⁹

As claims, RECs are also federally regulated by the principal federal truth in advertising regulator, the Federal Trade Commission (FTC).³⁰ According to the FTC:

Some generators who cannot sell all of their renewable energy at a sufficient premium in their “home” market, therefore, may find it advantageous to split their output into two products: The electricity itself and certificates (RECs) representing the renewable attributes of that

electricity. Under this second approach, generators sell their electricity at market prices applicable to conventionally-produced power. Generators then charge for the electricity’s renewable attribute separately by selling certificates to individuals and business purchasers across the country who use them to characterize the conventional electricity they buy as renewable. **The certificate represents a property right in the technological and environmental attributes of renewable energy.** The precise nature of the attributes represented by a REC, however, continues to be a matter of discussion. Generally, one REC represents the right to describe one megawatt of electricity as “renewable.” Currently, there is no uniform or mandatory definition of a REC. The REC market, therefore, helps renewable energy generators by significantly expanding the number of potential renewable energy purchasers, possibly avoiding transmission costs associated with traditional contracts, and helping to ameliorate supply and demand problems associated with the intermittent operation of some renewable energy facilities (e.g., solar power facilities).³¹

The FTC regulations for making environmental claims, called the “Green Guides,” and further guidance, are explored below.

CONTRACT AND GIS DEFINITIONS

GIS definitions can also be viewed to some extent as contract definitions,³² as parties contract to buy and sell GIS Certificates. The definition of “Certificate,” the serial numbered instrument that is transferred from a seller’s GIS account to a buyer’s GIS account as part of the purchase of REC, is in a GIS’s operating rules. Often this definition includes “all” attributes- for example in the Western Renewable Energy Generation Information System (WREGIS),³³ the Midwest Renewable Energy Tracking System (M-RETS),³⁴

the North American Renewables Registry (NAR),³⁵ and the PJM Generation Attribute Tracking System (PJM GATS).³⁶ Sometimes it does not, for example the North Carolina Renewable Energy Tracking System (NC-RETS)³⁷ and the Nevada Tracks Renewable Energy Credits (NVTREC).³⁸

GISs are the predominant infrastructure in the U.S. for transactions in compliance market RECs. Certificates are not created in GISs by simply tracking energy from a meter at the renewable resource. One megawatt-hour of output meter measurement from the resource alone does not translate directly into a one megawatt-hour Certificate. The GIS must account for, and deduct, the station service energy that flowed into the renewable resource from the grid in order to enable the renewable resource to generate its electric energy.³⁹ The renewable resource cannot be given credit for renewable generation that is greater than its net output,⁴⁰ so GISs typically require a complicated reporting and upload process by a third party or internal function that the GIS accepts as having functional separation from the merchant function of the generator.⁴¹

Domestic and foreign regulators are studying the use of blockchain in connection with renewable energy transactions.⁴² The Public Utilities Commission of Nevada has pending a docket on the use of blockchain for transactions in “portfolio energy credits,” which are one kilowatt-hour RECs.⁴³ Green Mountain Energy is also experimenting with blockchain-enabled voluntary transactions in solar net-metered RECs.⁴⁴ Those who would link REC trading to blockchain-like features face the challenge of the way GISs create Certificates.

Parties often by contract set forth their own

definitions of the RECs they are buying and selling, which if well drafted should be a superset of the GIS Certificate definition. Parties often use further contract language for environmental and transactional integrity. Broad GIS and regulatory definitions of the attributes included in a REC could be read to include negative environmental attributes, and in such cases contractual REC definition should be written to carve out adverse wildlife impacts, such as bird kills by wind farms, and other sources of environmental liability.

STATE DEFINITIONS

In the vacuum of federal leadership, many states over the past twenty years legislated programs requiring electric utilities to procure a minimum proportion of retail energy from renewable resources.⁴⁵ Such a program is commonly known as a renewable portfolio standard (RPS). RECs are often permitted to be used for RPS compliance and accounting.⁴⁶ There are now 43 U.S. states, districts and territories with mandatory or voluntary renewable energy targets or RPSs,⁴⁷ even though there is no national program. How RECs can separate from and recombine with energy, and the attributes included in RECs, varies across programs. There are also voluntary RECs markets and RECs purchase programs,⁴⁸ and non-profit organizations (known in the environmental sector as “NGOs,” for Non-Governmental Organizations), such as Center for Resource Solutions (CRS), that independently certify RECs for voluntary trading.

The Second Circuit Court of Appeals noted, “ ‘RECs are inventions of state property law whereby the renewable energy attributes are ‘unbundled’ from the energy itself and sold separately.’ . . . As such, different states define

RECs differently, focusing on various attributes which they deem to be especially relevant.⁴⁹ This patchwork of programs and practices includes diversity in the meaning of “Certificate” across GISs, between state definitions of a REC or equivalent instrument, between those definitions and the definitions used in the GIS Certificate accepted for compliance,⁵⁰ differences between law and regulation within the same state, and differences between regulations for different programs within the same state. Certificates created in one GIS generally are limited on movement into another GIS.⁵¹ Therefore, RECs may not lend themselves easily to cross-program, and even cross-GIS, fungibility. However, despite state and regional differences in definitions and regionalization of compliance RECs, there is sufficient uniformity in the understanding of RECs, as well as national standards, to support a robust national voluntary market.⁵²

A good example of a state with an inclusive “all attributes” definition in its statutory and regulatory RPS definitions, with limited, specific carve-outs, that is nevertheless in seeming conflict with implementation of its other energy and climate programs, as well as with programs of neighboring states, is California. California’s statutory definition of a REC for its RPS is:

- (1) “Renewable energy credit” means a certificate of proof associated with the generation of electricity from an eligible renewable energy resource, issued through [WREGIS], that one unit of electricity was generated and delivered by an eligible renewable energy resource.
- (2) “Renewable energy credit” **includes all renewable and environmental attri-**

butes associated with the production of electricity from the eligible renewable energy resource, except for an emissions reduction credit issued pursuant to Section 40709 of the Health and Safety Code and any credits or payments associated with the reduction of solid waste and treatment benefits created by the utilization of biomass or biogas fuels.⁵³

Debate among stakeholders that included the interaction of RPS RECs with potential future GHG claims led the CPUC to issue a decision on the “Definition and Attributes” of RECs.⁵⁴ This California regulatory definition of a REC for its RPS program is:

“Green Attributes” means any and all credits, benefits, emissions reductions, offsets, and allowances, howsoever entitled, attributable to the generation from the Project, and its avoided emission of pollutants. Green Attributes include but are not limited to Renewable Energy Credits, as well as: (1) any avoided emission of pollutants to the air, soil or water such as sulfur oxides (SO_x), nitrogen oxides (NO_x), carbon monoxide (CO) and other pollutants; (2) any avoided emissions of carbon dioxide (CO₂), methane (CH₄), nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride and other greenhouse gases (GHGs) that have been determined by the United Nations Intergovernmental Panel on Climate Change, or otherwise by law, to contribute to the actual or potential threat of altering the Earth’s climate by trapping heat in the atmosphere;¹ [1 Avoided emissions may or may not have any value for GHG compliance purposes. Although avoided emissions are included in the list of Green Attributes, this inclusion does not create any right to use those avoided emissions to comply with any GHG regulatory program.] (3) the reporting rights to these avoided emissions, such as Green Tag Reporting Rights. Green Tag Reporting Rights are the right of a

Green Tag Purchaser to report the ownership of accumulated Green Tags in compliance with federal or state law, if applicable, and to a federal or state agency or any other party at the Green Tag Purchaser's discretion, and include without limitation those Green Tag Reporting Rights accruing under Section 1605(b) of The Energy Policy Act of 1992 and any present or future federal, state, or local law, regulation or bill, and international or foreign emissions trading program. Green Tags are accumulated on a MWh basis and one Green Tag represents the Green Attributes associated with one (1) MWh of Energy. Green Attributes do not include (i) any energy, capacity, reliability or other power attributes from the Project, (ii) production tax credits associated with the construction or operation of the Project and other financial incentives in the form of credits, reductions, or allowances associated with the project that are applicable to a state or federal income taxation obligation, (iii) fuel-related subsidies or "tipping fees" that may be paid to Seller to accept certain fuels, or local subsidies received by the generator for the destruction of particular preexisting pollutants or the promotion of local environmental benefits, or (iv) emission reduction credits encumbered or used by the Project for compliance with local, state, or federal operating and/or air quality permits. If the Project is a biomass or biogas facility and Seller receives any tradable Green Attributes based on the greenhouse gas reduction benefits or other emission offsets attributed to its fuel usage, it shall provide Buyer with sufficient Green Attributes to ensure that there are zero net emissions associated with the production of electricity from the Project.⁵⁵

In most Western state RPSs, RECs are evidenced by Certificates issued by WREGIS. For California RPS compliance, the WREGIS Certificate must be owned or bought, and retired.⁵⁶ The issuance and exchange of these Certificates is in accordance with the WREGIS Operating Rules.⁵⁷ Since California paid for WREGIS startup,⁵⁸ Cal-

ifornia regulators had significant influence in the development of WREGIS and its rules. WREGIS's definition of a REC is:

WREGIS tracks the **renewable and environmental attributes** associated with renewable energy The Renewable and Environmental Attributes are unbundled from the megawatt-hour (MWh) of renewable energy or determined equivalent produced and recorded onto a WREGIS Certificate. One WREGIS Certificate is created for each MWh or determined equivalent of renewable energy produced, and each WREGIS Certificate is assigned a unique serial number. WREGIS Certificates can be used by electricity suppliers and other energy market participants to comply with relevant state/provincial policies, regulatory programs and to support voluntary "green" electricity markets. . . .⁵⁹ . . . A WREGIS Certificate (also called a **Renewable Energy Credit (REC)**) represents all **Renewable and Environmental Attributes** from MWh of electricity generation from a renewable energy Generating Unit registered with WREGIS or a Certificate imported from a Compatible Tracking System and converted to a WREGIS Certificate. . . . Disaggregation of Certificates is not currently allowed within WREGIS.⁶⁰ **Renewable and Environmental Attributes [means]: Any and all credits, benefits, emissions reductions, offsets, and allowances-howsoever titled-** attributable to the generation from the Generating Unit, and its avoided emission of pollutants. Renewable and Environmental Attributes do not include (i) any energy, capacity, reliability, or other power attributes from the Generating Unit; (ii) production tax credits associated with the construction or operation of the Generating Unit and other financial incentives in the form of credits, reductions, or allowances associated with the Generating Unit that are applicable to a state, provincial, or federal income taxation obligation; (iii) fuel-related subsidies or "tipping fees" that may be paid to the seller to accept certain fuels, or local subsidies received by the generator for

the destruction of particular pre-existing pollutants or the promotion of local environmental benefits; or (iv) emission reduction credits encumbered or used by the Generating Unit for compliance with local, state, provincial, or federal operating and/or air quality permits.⁶¹ A Certificate created and tracked within WREGIS will represent **all** of the Renewable and Environmental Attributes from a MWh of renewable generation. **WREGIS Certificates are “Whole Certificates.”**⁶² WREGIS is not designed to separately track any greenhouse gas or other emissions-related attributes.⁶³

CLAIMS

As shown above, law and regulation, as well as contracts that refer to GIS Certificates, include some or all “attributes” in a REC. The REC can be destroyed by improper assertions of ownership or making of claims on those attributes. FTC and other regulation and market best practices focus on such claims and their impact on RECs.

FTC “GREEN GUIDES”

The FTC most recently updated its “Green Guides” in 2012,⁶⁴ pursuant to its authority under Section 5 of the Federal Trade Commission Act⁶⁵ to prohibit “deceptive acts or practices.” The Green Guides provide that certain public statements concerning RECs would be “deceptive.” Although the word “guide” is in the name, these are regulations that the FTC enforces with fines; Green Guide enforcement actions include million dollar fines, injunctions, and consent decrees.⁶⁶ Although the FTC Act does not give a private right of action, many states have consumer protection statutes known as “little FTC Acts,” and some of those have private rights of action.⁶⁷

The FTC Green Guides tend to focus on how

claims would be interpreted by, and be deceptive to, consumers, and therefore are not written from the viewpoint of wholesale energy market participants. Nevertheless, they can be easily translated to wholesale energy and REC markets. The Green Guides provide:

Renewable energy claims. (a) It is deceptive to misrepresent, directly or by implication, that a product . . . is made with renewable energy or that a service uses renewable energy. A marketer should not make unqualified renewable energy claims, directly or by implication, if fossil fuel, or electricity derived from fossil fuel, is used . . . to power any part of the advertised service, unless the marketer has matched such non-renewable energy use with renewable energy certificates. . . .

(d) If a marketer generates renewable electricity but sells renewable energy certificates for all of that electricity, it would be deceptive for the marketer to represent, directly or by implication, that it uses renewable energy.

Example 1: A marketer advertises its clothing line as “made with wind power.” The marketer buys wind energy for 50% of the energy it uses to make the clothing in its line. The marketer’s claim is deceptive because reasonable consumers likely interpret the claim to mean that the power was composed entirely of renewable energy. If the marketer stated, “We purchase wind energy for half of our manufacturing facilities,” the claim would not be deceptive.

Example 5: A toy manufacturer places solar panels on the roof of its plant to generate power, and advertises that its plant is “100% solar-powered.” The manufacturer, however, sells **renewable energy certificates based on the renewable attributes** of all the power it generates. **Even if the manufacturer uses the electricity generated by the solar panels, it has, by selling renewable energy certificates, transferred the right to characterize that electricity as**

renewable. The manufacturer's claim is therefore deceptive. It would also be deceptive for this manufacturer to advertise that it "hosts" a renewable power facility because reasonable consumers likely interpret this claim to mean that the manufacturer uses renewable energy. It would not be deceptive, however, for the manufacturer to advertise, "We generate renewable energy, but sell all of it to others."⁶⁸

For example, it would be deceptive for a company **to imply** it used renewable energy, by calling it "green" or "wind" energy in a press release or saying it used renewable energy from a named renewable energy resource, if the company did not also own the RECs from that renewable resource, unless the press release also accurately set this out. It would therefore be deceptive for a utility buying bundled energy and RECs from Acme Wind Farm II that was also actively selling off the RECs to state its annual report that it was buying the energy from Acme Wind Farm II unless the utility also stated that it was selling the RECs to third parties. It would also be deceptive to list Acme Wind Farm II as part of its "wind energy portfolio" without explicit qualification.

The FTC provided more explicit guidance with a Division of Enforcement staff letter.⁶⁹ At the time, Vermont allowed "wind" energy to be counted for its renewable energy "SPEED" program even if the complying utility has otherwise sold the RECs from that energy. The staff letter warns the utility to exercise caution concerning its public communications:

Given the unusual nature of RECs, the operation of the renewable energy market relies heavily on the expectation of all market participants that these certificates have not been counted or claimed twice (*i.e.*, double counted). Such double-counting can occur, for instance, through multiple sales of the same REC or through re-

newable energy claims made by a company that already sold the RECs for its renewable generation. Therefore, any statement by the company that might lead consumers of that electricity to infer that the energy was produced cleanly risks double counting. Such double counting, in turn, not only risks deceiving consumers but also threatens the integrity of the entire REC market. **By selling RECs, a company has transferred its right to characterize its electricity as renewable.** Accordingly, the FTC's Green Guides advise that, if "a marketer generates renewable electricity but sells renewable energy certificates for all of that electricity, it would be deceptive for the marketer to represent, directly or by implication, that it uses renewable energy." See 16 C.F.R. § 260.15(d).

However, the Guides do not suggest a prohibition against all communications related to a company's renewable generating facilities where RECs are involved. For instance, they provide an example of a marketer that generates renewable energy, but sells RECs based on 100% of this renewable energy. In this scenario, the Guides advise that the marketer may state, "We generate renewable energy, but sell all of it to others." See 16 C.F.R. § 260.15, Example 5. As the Commission noted in its Statement of Basis and Purpose for the Green Guides, this statement represents one, but not the only, way such marketers may non-deceptively communicate a renewable energy generation claim when they have sold the renewable attributes of all their energy. **The essential part of this advice is that any generation claim made in this context should be accompanied by a clear disclosure about the REC sales from the facility.** In addressing these issues in the Green Guides, the Commission did not provide specific guidance on the content of REC-related claims made by power producers who generate renewable energy as a substantial portion of their business. However, it did warn that power providers that sell null electricity to their customers, but sell RECs based on that electricity to another party, should keep in mind

that their customers may mistakenly believe the electricity they purchase is renewable, when legally it is not. Accordingly, it advised such generators to exercise caution and qualify claims about their generation by disclosing that their electricity is not renewable.

Therefore, a utility should avoid unqualified or poorly qualified representations that state or imply that its customers will receive renewable electricity from its renewable facilities when, in fact, the utility has sold or will sell RECs from those projects elsewhere. We recognize that public utilities can face particular challenges with regard to these issues. Utilities that construct and operate renewable facilities must communicate with regulatory entities and ratepayers about the details of these projects during siting, construction, and operation. In addition, utility customers in many states do not choose among competing retail suppliers. In these locations, state regulatory decisions largely determine customers' electricity supplier, their conditions of service, and the prices they pay, raising questions about the materiality of utility representations to those customers' purchasing decisions.

Despite these considerations, even those utilities that construct and operate renewable facilities in states with no retail competition should exercise care in their communications about those projects. The special conditions applicable to utilities do not diminish the need for clear communications about renewable facilities and RECs. Although utilities must communicate with the public and regulators about facility construction and operation, they can do so while avoiding misimpressions by adequately qualifying all of their communications. Similarly, although customers in such service areas do not shop for retail electricity, we cannot rule out the possibility that renewable energy statements from their utility company are material to them.

For instance, customers may use such information to change the amount of power they consume

from the utility, install on-site generation, or switch fuel types (e.g., from electricity to natural gas). Finally, we realize that, in some cases, utility officials may not know whether RECs will be sold for the project at the time it is constructed. However, if the utility subsequently sells RECs from the facility, it carries a particular burden to inform their customers that they are no longer receiving renewable electricity.⁷⁰

NATIONAL ASSOCIATION OF ATTORNEYS GENERAL

A key legal milestone for RECs was the publication of the National Association of Attorneys General: Environmental Marketing Guidelines for Electricity (NAAG Guidelines)⁷¹ in 1999. The NAAG Guidelines define RECs as “**the right to claim the attributes of the electricity**”⁷² that can be “sold separately from the power itself.”⁷³ The NAAG Guidelines parse through then-existing FTC regulations to apply them to environmental claims. The NAAG Guidelines evidence that marketing claims that would be deceptive under the FTC Green Guides also would be deceptive under state laws. The NAAG Guidelines also evidence that even in states without RPSs or regulatory definitions of RECs, RECs include commodifications of environmental claims.

As commodifications of the “attributes” of renewable energy and the behavior⁷⁴ of generating renewable energy, RECs transfer to the buyer the right to claim that it is engaging in the benefit of bringing renewable energy to the electric grid. RECs convey the social positive, the good deed, the reason why you should like me instead of my competitor. An analogy⁷⁵ of this commodification is an agoraphobe who wants to do the good deed of helping a blind man cross the street, but can’t do so herself because she can’t leave her house. She instead pays a boy scout to do so, by

an agreement under which the agoraphobe can claim that she, rather than the boy scout, helped the blind man. The agreement commoditizes the good deed, and sells it from the boy scout to the agoraphobe. The boy scout would be in breach of the agreement if he put on Instagram a picture of himself helping the blind man cross the street, because he would have claimed that good deed for himself, thus destroying the agoraphobe's ability to claim she had done it. The situation is the same with RECs and environmental attributes. If a REC or environmental attribute seller claims to have done the good deed itself, that seller has taken the good deed and retired it by claiming it -“consumed” it- for the seller's own benefit to the derogation of the buyer's rights as a purchaser of the REC.

CENTER FOR RESOURCE SOLUTIONS

Center for Resource Solutions (CRS) administers the Green-e⁷⁶ renewable energy certification program and is highly influential with regulators and the RECs market. CRS is especially concerned with double counting and double claiming. It publishes papers⁷⁷ and writes to regulators.⁷⁸ According to one utility, “Green-e Energy is the nation's leading independent certification and verification program for renewable energy. . . . A Green Tag without Green-e certification or the ability to become Green-e certified loses value in the market.”⁷⁹ State commission orders further illustrate the high standing of CRS standards with regulators.⁸⁰ The FTC agrees with CRS's point of view on double claiming in the Green Guides, although CRS was unable to persuade EPA in connection with Emission Reduction Credits (ERCs) in the Clean Power Plan.⁸¹

CRS views its standards as essential to protecting the integrity of the RECs markets, and has delineated three species of prohibited double counting: “double sale,” which is the sale of the same REC to two different people; “double use,” which is the use of the same REC for two different purposes; and “double claiming,” which is two or more parties claiming the benefits of the same megawatt hour of renewable generation.⁸² The Green-e Framework for Renewable Energy Certification provides: “making a claim (e.g., stating ‘we buy wind power’) is one example of a ‘use’ that results in retirement.”⁸³ CRS gives an example of what it views as an impermissible utility claim when RECs have been sold:

A utility is selling the RECs from its wind farm to a REC marketer. The utility wants to advertise its commitment to the environment and launches an ad campaign with language about green power and pictures of the wind farm. The utility also says that it has invested in renewable energy. In this example, the customers (and potential customers) of the utility are under the false impression that they are purchasing renewable energy for their homes or businesses. In fact, the claims for all of the renewable attributes of that power were transferred to the marketer with the RECs. To avoid double-counting and false advertising, the utility must not advertise that they supply green power. If the utility discusses the generation of renewable energy it must also disclose that it is selling off the RECs from the renewable facility and that the wind power is not part of the system mix provided to utility customers.⁸⁴

DOUBLE CLAIM LANDMINES

Retirement claims that destroy a REC bought by one company from another company can be made by a complete stranger to that REC sale contract. A wind turbine manufacturer's claim to have provided the renewable energy that was cre-

ated through the wind farm's use of its turbines arguably retired the RECs that were resold by the buyer of the RECs from that wind farm.⁸⁵ RECs meant for the Green-e program were found by CRS to have been retired when a utility buying the energy from a wind farm, but not the RECs, posted pictures of the wind farm on its website.⁸⁶ An example of a REC retirement through a compliance claim by another regulated party that was not a compliance claim of the REC itself or of the energy, was when California Energy Commission (CEC) staff said a utility's California compliance RECs were to be disqualified because the Air Force reported acquisition of the landfill gas (the Air Force did not mention the RECs) used to generate the energy under EPACT 2005 retired the REC, CEC staff noting that avoided emissions of GHG are included in the CPUC's definition of a REC.⁸⁷ This was not a marketing claim but rather a compliance claim by another regulated party, under a completely different jurisdiction, that was not a claim on either the REC or the energy.

Public statements that energy that was generated by a renewable resource that has been unbundled from the REC is "renewable," "green," "carbon free," "zero carbon," "wind," or "solar" generally consume or retire that REC by claiming it. Even if not explicitly claiming to be buying the renewable energy, stating that one is buying from the "Acme Wind Farm II" when one is buying the energy but not the RECs from Acme Wind Farm II can constitute a claim on the RECs that retire or consume them. Careless public statements that are claims retiring RECs present regulatory and civil liability risks.

Some areas of debate around specific policies are explored below. In general, any voluntary or

compliance program that regulates or reports renewable energy generation or environmental attributes delivered to load, customers, or a specific geographic area, or associated with retail sales, consumption, or use, affects and may "consume" RECs, depending on which of the environmental attributes are contained in that REC by statute, regulation, GIS, or contract. RECs might be used as accounting, tracking or compliance instruments in voluntary or mandatory renewable energy sales, power source and emissions disclosures to customers, RPSs, net zero GHG electricity programs, GHG reporting or regulation, and clean fuels or transportation programs. Renewable energy or climate change programs that do not use RECs, but rather use an alternative compliance instrument to count power without RECs as renewable or having a zero emission signature, may be causing double counting or violating a REC owner's property rights.

"FUTURE" ENVIRONMENTAL ATTRIBUTES

Ownership of RECs transfers in slow motion, from the commitment to generate, to generation, through generation data upload to, and certification in, a GIS, through transfer of the GIS Certificate. REC ownership can be destroyed before or after GIS transfer through improper claims. CFTC guidance and precedent demonstrate that a transfer of ownership in a commodity can complete over time. This is revealed in the CFTC's interpretation⁸⁸ of what "actual delivery" means in the context of certain transactions in retail commodities, including tangible commodities, like metals, or intangible ones like RECs or bitcoin, where ownership, possession, control, title, and the timing of the transfer of any of these (which need not be simultaneous, and

could conceivably be moments, days or even weeks apart,⁸⁹ and the physical location of the commodity purchased or sold, are among the factors that the CFTC indicates that it may consider in determining whether or not a commodity was actually delivered.

RECs can be strangled in the cradle by claims that retire the RECs before the RECs could even have been created. RECs can also be destroyed after GIS transfer by an improper claim made by the seller or a third party. In a sparsely papered transaction taking place after the renewable energy has been generated and the environmental attributes certificated in the GIS, the transfer of the GIS certificate may be the only step in the transfer of environmental attribute ownership.⁹⁰ In a well-papered transaction taking place before the renewable energy is generated, such as a long-term power purchase agreement, the transfer of the certificate or attestation may be a last physical step⁹¹ in a continuing process of transfer⁹² of environmental attribute ownership that started with the promise to generate and sell the renewable energy, and includes the post-GIS transfer obligation to not make a destructive claim.⁹³

The ability to use a REC for compliance with an RPS is a characteristic of the REC as a commodity; it is not the entirety of the commodity itself. Perhaps a specific REC can be used to comply with an existing RPS, and perhaps it could also be used to comply with a future RPS. To analogize, a certain grade of cement has characteristics that could meet a current building code, and those same characteristics might meet a future, as yet unwritten, building code. RECs differ from cement in that building codes are a condition for use, while RPS compliance is an expected benefit from use. If a REC could be

used to comply with an RPS yet to be written, as a commodity, that REC includes the expectations of the future benefit of so using that REC. The owner of a REC owns some or all of the attributes of the renewable energy and the behavior of generating that renewable energy, those attributes that enable compliance with an existing RPS could be the same as those attributes that allow compliance with a future RPS. The purchaser of a REC is buying the right to use the attributes that are embodied by law, regulation, or GIS definition in the REC for whatever purpose the owner of those attributes may choose to put them. The purchaser owns the right to use the attributes for a benefit the purchaser expects from the possibility of use to comply with an expected RPS that does not currently exist. Present transferability of future benefits expected to come from future laws, the “assignment of expectancies” property rights inherent in RECs, will vary among the states whose laws govern the contract or RECs in question.

A working group convened at the inception of WREGIS⁹⁴ concluded that under California law this expectancy is assignable, as in California even the possibility of a benefit is assignable.⁹⁵ Further, at least under California law, a secured creditor can probably successfully take and perfect its security interest in the assignment of expectancies stick in the bundle of legal rights in a REC.⁹⁶

If a new federal or state RPS creates a new instrument for compliance that is attributable to generation of renewable energy, a seller under a long-term renewable resource sale contract dated before the new RPS may claim that such new instrument was not transferred, and rather belongs to the seller. A buyer will likely assert that

having bought the renewable generation, including the “attributes” of renewable energy transferred by the contract, the ability of that renewable energy generation to comply with that new RPS is among the purchased “attributes,” and also that any separate sale by seller may lead to a destructive claim on the RECs. This debate has occurred before with respect to RECs, and the buyers have, for the most part, won.

Early in the history of RECs, “qualifying facilities,” or “QFs,” the beneficiaries of a mandatory energy purchase program under Public Utility Regulatory Policies Act of 1978 (PURPA), claimed that the RECs that were created by the renewable energy purchased by the utilities were not part of the renewable energy sold to the utilities. FERC ruled that PURPA did not transfer the RECs and whether the utility purchased the RECs as part of its PURPA contract was a matter of state contract law.⁹⁷ Different state utility commissions promulgated different rules on whether the PURPA contract transferred the RECs,⁹⁸ and courts found that the utilities did indeed purchase the RECs along with the renewable energy, even if statutes defining RECs post-dated the PURPA contracts.⁹⁹ Because PURPA requires utilities to purchase energy from a facility that is renewable, many are of the view that the mandatory purchase obligation on account of the “renewable-ness” to some extent consumes the RECs, making QF RECs less appetizing for third party transfer; for example, California’s RPS limits use of market-traded QF RECs for RPS compliance.¹⁰⁰

CUSTOMER CHOICE PROGRAMS

RECs enable utility retail customers who cannot directly interconnect to renewable energy re-

sources to use renewable energy. RECs enable delivered and consumed electricity to be characterized as having renewable energy environmental attributes. Retail electric utilities have long offered such customer choice programs to customers.¹⁰¹ These programs typically match customer energy usage with the utility’s purchase and retirement of RECs. One of the earliest and most respected and successful customer choice programs is PacifiCorp’s Blue Sky renewable energy program, which gives its customers the option to purchase “Blue Sky blocks”; PacifiCorp retires RECs to match customer consumption.¹⁰² These programs provide important and valued benefits to customers.¹⁰³

RECS, “ZERO CARBON” AND OFFSETS

Reduced GHG emissions are often promoted as a benefit of renewable energy and RECs, especially in customer choice programs,¹⁰⁴ and also in state compliance programs.¹⁰⁵ California has committed to zero-Carbon energy use by 2045.¹⁰⁶ The nation’s largest electric utility by number of customers, Duke Energy, has committed to be net zero-Carbon by 2050.¹⁰⁷ Engaging in the behavior of generating energy from renewable energy resources instead of from fossil fuel resources also displaces the fossil fuel generation and reduces emissions of GHG on the grid, by “avoiding” the fossil fuel GHG emissions.

Areas of policy debate concerning present and future mandatory and voluntary state and federal caps on GHG emissions and RPSs as they relate to RECs include where the “avoidance” takes place, who owns the avoidance, the quantity of the avoidance, whether saying “my energy has no Carbon” is a claim on an attribute of a REC

that retires the REC, and whether using zero Carbon energy offsets other Carbon emissions. For example, EPA interprets the Clean Air Act to provide that avoided emissions belong to the utility identified to be buying the renewable energy instead of generating with a coal plant, irrespective of RECs.¹⁰⁸

Regulators of different Western states, and even within the same Western state, have argued over the consequences upon a REC of renewable energy and GHG compliance and claims. Though the highly inclusive California definition of a REC specifically includes avoided emissions,¹⁰⁹ the California Public Utilities Commission (CPUC) concluded that “this definition does not create any right to use those avoided emissions to comply with any GHG regulatory program.”¹¹⁰ The CPUC stated prior to AB32 that “once a GHG cap is imposed, RPS-eligible generation subject to a cap never avoids emissions. The ‘avoided emissions’ will continue to be included in the REC, but the avoided emissions value will be zero; the balancing GHG emissions value of the null power will therefore also be zero.”¹¹¹

CRS’s position is that GHG emissions are an attribute of generating renewable electricity and are not physically delivered to electric load, and that in general, RECs include both the direct GHG emissions attribute and the “avoided grid emissions” associated with renewable electricity generation.¹¹² According to CRS:

Generating electricity can both directly emit an amount of GHGs and cause a net change to GHG emissions from other sources on the grid as generation is displaced (or avoided). We call these the two [GHG] “attributes” of electricity generation: 1. The direct emissions associated with generation; and 2. The avoided grid emis-

sions due to generation. Emissions are attributes of generation because they occur at the point of generation, rather than at the point of distribution or consumption, and they characterize the manner of electricity production, along with fuel type, location, and other attributes.¹¹³ In general, REC owners can claim: 1. To be consuming electricity with the direct emissions (or emissions factor or profile) of the renewable generator of the REC (e.g. zero for wind and solar), and 2. That the generation of their electricity avoids emissions on the grid [unless it is located in a capped region and allowances have not been retired on its behalf¹¹⁴]. These claims are the same regardless of whether the RECs were delivered and consumed through an RPS or the voluntary market.¹¹⁵

As set forth above, RECs are often defined to include “all environmental attributes” of electricity generation, and CRS reports that there are no states that exclude the direct GHG emissions associated with generation from the attributes included and conveyed in RECs.¹¹⁶ CRS’s position is that without the direct GHG emissions (e.g. zero emissions) attribute included in the REC, RPS programs would not be able to deliver carbon benefits, which in many states is an explicit purpose of the RPS.¹¹⁷

A relic from earlier days of REC development, the ABA/EMA/ACORE RECs Master Agreement, provided a mechanism to break out the GHG benefit attributes from the other attributes of a REC.¹¹⁸ The form was published in 2007 after a two-year effort, and thereafter the market and regulation developed in a direction that for the most part keeps “all” environmental attributes in RECs. For example, in addition to the state and federal definitions of RECs containing “all” attributes set forth above, most GISs do not allow RECs to have their various environmental attri-

butes disaggregated and separately transacted; WREGIS dead-ends disaggregated RECs into what it calls a Reserve Subaccount, from which the RECs may not be transferred or resurrected, including for compliance retirement.¹¹⁹ Future policy could develop in a way that gives the ABA/EMA/ACORE contract mechanism new relevance. But any such policy developments must be mindful that disaggregation by either fiat or contract is at variance with the prevailing regulatory and contract structure of RECs and REC markets.

CRS's position is that disaggregating the direct GHG emissions or emissions rate from other generation attributes included in the REC would create discrepancies between the fuel type and emissions of purchases that would be factually inconsistent and inescapably confusing—for example, RPS customers could report using wind power but not the emissions intensity of wind power.

CRS's position is that while accounting of emissions from electricity generation delivered to load (customers, sales) affects RECs, “source-based” policies or accounting of emissions from electricity generation that regulate or measure what is generated in a particular place (rather than what is delivered to or consumed by that place), do not: “the difference between production and consumption permits both the renewable energy generator and the REC consumer to claim production and use, respectively, of generation.”¹²⁰ CRS's position is that for the same reason, that direct GHG emissions attributes and claims in RECs are not affected by caps on emissions from the power sector:

Broadly speaking, production-based GHG Regulation does not affect the direct emissions of re-

newable energy generation [. . .]. It will not affect the claims of REC owners to the direct emissions attribute or Scope 2 GHG accounting by REC purchasers due to the distinction between production and consumption claims.¹²¹

Notwithstanding CRS's position, disaggregation of some GHG attributes from RECs has been occurring on a de facto basis in some programs. These GHG attributes can include the attributes of avoiding GHG emissions, and the attribute of reportable or claimable as possessing zero direct GHG emissions.

Separate from avoidance and zero emission reporting as REC attributes is the concept of a GHG “offset,” which is generally not defined as, and is hard to see as being part of, a REC in the first place. The “avoided” emissions included in RECs are different from “offset” emissions, and RECs are different from offsets.¹²² According to EPA:

An offset project is “a specific activity or set of activities intended to reduce GHG emissions, increase the storage of carbon, or enhance GHG removals from the atmosphere.” The project must be deemed additional; the resulting emissions reductions must be real, permanent, and verified; and credits (i.e., offsets) issued for verified emissions reductions must be enforceable. The offset may be used to address direct and indirect emissions associated with an organization’s operations (e.g., emissions from a boiler used to heat your organization’s office building). The reduction in GHG emissions from one place can be used to “offset” the emissions taking place somewhere else. Offsets can be purchased by an organization to address its scope 1, 2, and 3 emissions. Offsets can be used in addition to an organization taking actions within its own operational boundary to lower emissions. Offsets are often used for meeting voluntary commitments to lower GHG emissions where it is not feasible

to lower an organization's direct or indirect emissions.¹²³

There are active markets in Carbon offsets, although not as active as they might have been with better policy choices. Recently Mark Carney, the former Governor of the Bank of England, convened a Taskforce to see what could be done to improve offset markets.¹²⁴ There will not be room for improving offset markets via RECs, since RECs are not offsets. CRS explains:

Avoided emissions claims made by REC owners are not equivalent to carbon offset claims. First, avoided grid emissions are not equivalent to absolute reductions on the grid or global reductions. They are only a calculation of the emissions displaced by the renewable generation. Avoided grid GHG emissions cannot be used to adjust a consumer's carbon footprint or for Scope 2 emissions calculations. Second, avoided grid emissions associated with the renewable generation are not necessarily caused by the renewable energy/REC purchase or purchaser. Rather, the generation used by the purchaser results in avoided emissions. In public statements, avoided grid emissions should always be associated with the renewable energy generation itself or the supply for the renewable energy product, rather than the purchaser's action.

In general, RECs should not be confused with carbon offsets. They are different instruments that convey different claims, and they are accounted for differently in a consumer's GHG emissions inventory or footprint. Whereas RECs represent a MWh of renewable energy generation, carbon offsets represent an amount of GHG emissions reduction in tons of CO₂e.¹²⁵ REC purchasers effectively contractually fuel switch from a certain mix of electricity generation to renewable generation, and can therefore both reduce the portion of their carbon footprint associated with purchased electricity (Scope 2) and claim that their generation has some emissions

effect on the grid. A carbon offset is a standalone, global emissions reduction beyond a baseline level of emissions from a project activity that would not have occurred but for the carbon offset market. Carbon offsets can be used to address any scope of emissions as a net adjustment to the gross consumer GHG inventory. Likewise, purchasing carbon offsets, which do not include non-GHG generation attributes, is not equivalent to purchasing renewable energy instruments or certificates, and carbon offsets cannot be used to make renewable energy consumption or zero-emissions electricity usage claims.¹²⁶

Other NGOs also object to the sale of RECs as carbon offsets,¹²⁷ and criticize organizations selling RECs as offsets.¹²⁸ The Green-e Climate Standard, a standard for retail carbon offsets, prohibits the sale of a GHG emission reduction product derived from renewable energy if a REC or the electricity associated with the REC is used for any compliance purpose.¹²⁹ Again, CRS explains:

Though they are different instruments and projects must meet different criteria to generate each of them, a REC and a carbon offset cannot both be generated or issued for the same MWh of renewable energy generation since the avoided emissions attribute of renewable energy is included in both of them. An individual MWh can either be used and claimed as a REC or used to generate a carbon offset. Where carbon offsets are issued to renewable energy generators that meet carbon offset criteria, the RECs associated with those MWh must be retired to substantiate the creation of offsets in order to avoid disaggregation of the attributes included in a REC. Though RECs do not deliver offset claims, avoided emissions are included in a REC so that voluntary renewable energy sales and RPS programs can deliver these benefits and so that they are not sold off separately, for example in a carbon offset.¹³⁰

Not using RECs as offsets should be distin-

guished from RECs that are associated with a fuel creation and generation process that creates both RECs and offsets. One can separately offset Carbon through fuel creation, such as by capture of methane from landfills or agricultural waste that creates Carbon offsets through a process that is monitored, measured, and verified pursuant to a Carbon offset protocol,¹³¹ and then combust that captured methane, and transfer a portion of the Carbon offsets to the transferee of the REC sufficient to cause the combustion of the captured methane to have net zero emissions.¹³² The global warming potential over 100 years of captured methane is 28 times greater than that of CO₂,¹³³ far more than enough to offset the global warming potential of the avoided fossil fuel generation.

Such a transfer of Carbon offsets to the REC purchaser is explicitly required by the California RPS with respect to biomethane combustion: “If the Project is a biomass or biogas facility and Seller receives any tradable Green Attributes based on the greenhouse gas reduction benefits or other emission offsets attributed to its fuel usage, it shall provide Buyer with sufficient Green Attributes to ensure that there are zero net emissions associated with the production of electricity from the Project.”¹³⁴ In the case of electricity generation from biogas (which is also known as biomethane) that was captured from landfill or livestock methane, the offsets and RECs are associated with different activities: offsets for the capture of the methane, and RECs for the generation of electricity from that methane.¹³⁵ Likewise, the carbon benefit included in each commodity is associated with a different set of reductions, or reductions from different carbon pools—one with the reduction of methane emissions, and the other with the reductions that occur on the grid as a result of biogas electricity production.

California also has statutory Carbon offset claims regulation in its RPS:

A retail seller, local publicly owned electric utility, or an intermediary party to a biomethane procurement contract shall not make a marketing, regulatory, or retail claim that asserts that a biomethane procurement contract to which that entity was a party resulted, or will result, in greenhouse gas reductions related to the destruction of methane if the capture and destruction is required by law. If the capture and destruction of the biomethane is not required by law, a retail seller, local publicly owned electric utility, or an intermediary party to a biomethane procurement contract shall not make a marketing, regulatory, or retail claim that asserts that a biomethane procurement contract to which that entity was a party resulted, or will result, in greenhouse gas reductions related to the destruction of methane, unless the environmental attributes associated with the capture and destruction of the biomethane pursuant to that contract are transferred to the retail seller or publicly owned electric utility that purchased that biomethane and retired on behalf of the retail customers consuming the electricity associated with the use of that biomethane, or unless the biomethane procurement contract prohibits the source of biomethane from separately marketing the environmental attributes associated with the capture and destruction of the biomethane sold pursuant to that contract. These attributes shall be retired and may not be resold.¹³⁶

ADDITIONALITY

The FTC had initially considered, and ultimately rejected, requiring “additionality” in connection with Carbon offset and REC claims in its Green Guides revisions.¹³⁷ Broadly speaking, “additionality” is a concept of causing a benefit that is additional to what would have occurred under business as usual,¹³⁸ and there are many types of additionality that could be applicable to

contracting for RECs from new renewable resources.¹³⁹ An environmental benefit required by a regulator is not additional, since it would have happened anyway. Concepts of additionality leaked into renewable resource markets from their original home in Kyoto Protocol flexible mechanism debates,¹⁴⁰ adding to RECs a signifier as an addition to sales price that rewards development. Additionality came after, and did not drive the development of, RECs, and is not a requirement for the creation of RECs or to claim use or delivery of renewable energy through RECs.¹⁴¹ Nevertheless, additionality is now a present concept in voluntary renewable energy procurement. A technology company contracting for a new renewable resource facility for its data center in a jurisdiction that does not mandate use of that full quantity of renewable energy may assert additionality in connection with its RECs claims.¹⁴²

REGULATORS DEBATE RECS AND “ZERO CARBON”

California Air Resources Board (CARB) AB32 cap-and-trade program reporting regulations require an importer of energy into California from a specified renewable energy generating unit to report to CARB an emissions factor of zero for the imported energy, as well as the disposition of, without being required to retire,¹⁴³ the RECs from that resource, if there are any RECs from that resource that are eligible under the California RPS. Imported electricity is “electricity generated outside the state of California and delivered to serve load located inside the state of California.”¹⁴⁴ The electricity is counted as a zero emissions import for CARB’s purposes, and CARB does not require retirement of the REC, and is in fact indifferent as to how the REC

is used.¹⁴⁵ California has a very broad and detailed definition of a REC that specifically references GHG emissions,¹⁴⁶ and yet under California regulation, a zero-emission delivery to California reported to CARB is not a claim that requires a retirement. The California Energy Commission (CEC) concluded that reporting energy as zero-emitting does not preclude the use of the associated REC for RPS compliance.¹⁴⁷ Therefore, for energy from CEC-certified renewable energy facilities, the importer reports a direct delivery of a zero-emission electricity import pursuant to California’s mandatory reporting rule and cap-and-trade program.¹⁴⁸ but, as far as California is concerned, the RECs may be used for compliance with California’s or any other state’s RPS. While California may determine that the same renewable energy may be reported as a zero-emission electricity import and also used for compliance with California’s RPS, the RECs may also potentially be used outside of California, for example in another state’s RPS. Other states may consider the RECs “consumed” by California’s use of the zero emission (direct GHG emissions) attribute for the report of electricity delivered to serve California load pursuant to California’s AB32 program.

The Western “Energy Imbalance Market,” or EIM, is a regional voluntary real-time wholesale power market in the West that allows generators outside of California to sell energy into the California Independent System Operator (CAISO). A firestorm was touched off among Western state regulators by a since-withdrawn April 19, 2017, WREGIS memo that took a position opposite CARB’s, by alleging that “WREGIS account holders bidding energy into the EIM should be prepared to retire the RECs associated with that energy. The RECs have been split and are no lon-

ger complete RECs as defined by the WREGIS Operating Rules. These RECs should be retired under the timeline outlined by the applicable state program or as defined by the CAISO.” Why WREGIS distinguished imports into EIM from other non-EIM imports into California remains obscure.

The WREGIS memo precipitated regulators in Western states considering the effect of reporting zero Carbon emissions for renewable energy upon associated RECs, especially in relation to EIM, in a June 2017 Oregon Department of Energy (ODOE) request¹⁴⁹ for comments¹⁵⁰ and an August 2017 WREGIS EIM task force meeting.¹⁵¹ The outcomes were described by commenters¹⁵² at a CAISO September 2017 regional forum. CARB, the CPUC, and CEC jointly explained:¹⁵³

California’s Cap-and-Trade Program does not require that RECs be retired for specified source imports for compliance with the Program, nor does it consider that the assignment of a zero emission factor constitutes avoided emissions or a claim on a REC. Through the reporting of actual emissions of imported electricity from renewable electricity resources, the Cap-and-Trade Program recognizes that zero-emission electricity was brought into California to serve California load. Electricity imported via EIM is electricity from a specified source and is reported as such to CARB.

ODOE withdrew, subject to further process, its initial position that imports of specified renewable resource energy into California claimed the associated or formerly associated RECs, and WREGIS withdrew its by-then infamous memo that an EIM import from a renewable energy resource required retirement of the associated REC. Potential reasons included recognition of those state programs that required reporting zero

Carbon emissions for energy notwithstanding separation from RECs, as well as the arguments set forth in comments of the CEC¹⁵⁴ and others.¹⁵⁵ CRS¹⁵⁶ disagreed with the outcome, just as it disagrees with CARB rules not requiring REC retirement in connection with an import of the associated energy.¹⁵⁷

These issues were again raised by California’s Independent Emissions Market Advisory Committee (IEMAC),¹⁵⁸ the EIM Regional Issues Forum (RIF),¹⁵⁹ and Washington’s Clean Energy Transformation Act (CETA) Carbon and Electricity Markets Workgroup (MWG).¹⁶⁰ The eligibility of RECs associated with reported California renewable resource energy imports remains under discussion in Washington State under CETA; in Oregon under RPS and the Clean Fuels Program;¹⁶¹ in Arizona under its proposed new Clean Energy Standard; in Colorado under implementation of SB19-096, HB19-1261, and SB19-236; and in potentially other Western states. California’s IEMAC explains:

At the heart of this issue lie potential inconsistencies in how policymakers in California and across the west implement climate change policies designed to reduce the carbon intensity of electricity generation. California tracks tons of GHGs in order to assess compliance with its cap-and-trade program. Under RPS, renewable energy producers generate electrical energy (MWh) and RECs (one REC per MWh). In contrast with the cap-and-trade program, RPS compliance is measured in terms of RECs. If a neighboring state associates a REC with a low- or zero-carbon resource when California also counts the low- or zero-carbon resource with the associated energy delivery, there is the potential to “count” (albeit using different metrics) the same low- or zero-emissions attribute twice.¹⁶²

Separate from RPS and GHG programs in

many states are “power content labelling” or “power source disclosures” that communicate claims with respect to resource type and Carbon emissions. These programs typically require retail energy suppliers to provide disclosures concerning the sources, and sometimes the associated GHG emissions intensity, of electricity serving retail load. These programs set forth rules on whether the buyer needs the RECs in order to disclose as renewable the energy use, which procurement transactions, such as unbundled RECs and what are called “firmed-and-shaped renewable procurements,” count, and how to account for RECs in GHG emissions intensity. The CEC rulemaking for the Power Source Disclosure Program under AB 1110¹⁶³ ultimately required that RECs must be owned and not sold, though not necessarily retired, by regulated retail electricity suppliers both to report an eligible renewable fuel type and to assign the GHG emissions intensity of an eligible renewable generator: “Electricity purchases from an eligible renewable generator without the associated RECs shall be classified as unspecified power.”¹⁶⁴ But the CEC otherwise aligned emissions reporting in the power content label with CARB GHG reporting requirements¹⁶⁵ by not allowing unbundled RECs to be included in GHG intensity calculations¹⁶⁶ and assigning positive GHG emissions to the energy provided in “firmed and shaped” renewable energy transactions.¹⁶⁷ In response to comments that the renewable energy percentage on the power content label should be consistent with the RPS, the CEC responded that “procurements made to satisfy RPS requirements do not necessarily reflect the sources of electricity associated with retail load in California,” and further that the “PSD program is not RPS, and cannot fully harmonize with RPS without contradicting provisions of the enabling statutes.”¹⁶⁸

EPA CLEAN POWER PLAN SEAMS WITH STATE RPSS AND FTC GREEN GUIDES

The Obama Administration EPA’s now-repealed Clean Power Plan (CPP)¹⁶⁹ is discussed here in depth because the CPP may be a touch point for an incoming Biden Administration and also because the CPP rulemakings provide EPA’s interpretation under the Clean Air Act of avoided emissions attributes. Parts of the CPP presented potential conflicts with the existing legal and contract infrastructure of RECs and REC markets as discussed above, and such conflicts should be avoided because they may lead to results that are contrary to the shared goal of promoting renewable energy and combating climate change and that interfere with existing contract rights.

The CPP provided for a new environmental compliance commodity called Emission Reduction Credits (ERCs).¹⁷⁰ EPA described ERCs as CPP compliance instruments and RECs as RPS compliance instruments and said that both could come from the same megawatt-hour of qualifying renewable energy and be used separately in each respective program.¹⁷¹ ERCs were “discrete tradable commodities”¹⁷² and according to EPA, “trading does nothing more than commoditize compliance.”¹⁷³ ERCs did not appear to measure avoided emissions in avoided tonnes of CO₂e, but rather avoided generation measured in megawatt-hours.¹⁷⁴ EPA proposed that an “ERC does not constitute a property right,”¹⁷⁵ which is typical for allowance or government issued permit trading programs, since the government does not want to be at risk of a Fifth Amendment taking claim if it reduces overall budgeted allowances.¹⁷⁶ EPA provided a number of not necessarily consistent descriptions of ERCs: “the

environmental attributes here [are] CO₂ emissions,”¹⁷⁷ “investments in pollution control measures,”¹⁷⁸ “represent[] an investment in surplus emission rate reductions,”¹⁷⁹ and “invest[ment] in incremental [renewable energy] generation.”¹⁸⁰

EPA threw up its hands when it came to fully describing RECs.¹⁸¹ Although EPA recognized the voluntary use of RECs,¹⁸² and referred to private contract tangentially,¹⁸³ EPA seemed to miss both that all voluntary and many mandatory REC measures arise from GIS and contractual definitions of RECs, and that RECs are often created by contract; in fact, Colorado regulation defines a REC as a “contractual right.”¹⁸⁴

After noting that RPSs “are policy instruments that states may choose to implement for a number of reasons not related to CO₂ emission reductions,”¹⁸⁵ EPA pointed to the extreme variability of state RPS program REC definitions to explain why RECs fail as a CO₂ reduction policy instrument: “differences across RPS policies in eligible resources, crediting mechanisms, deliverability requirements, alternative compliance payments, and other policy elements made the regional averaging of state level RPS requirements challenging.”¹⁸⁶

And EPA clearly understood that state definitions of RECs presented issues in effecting fully separate uses of RECs and ERCs (the CPP required states to write state implementation plans):

An ERC may be issued based on the same data and verification requirements used by existing REC and EEC [sic] tracking systems for issuance of RECs and EECs [sic]. EPA notes that the definitions of other instruments, such as RECs, differ (as established under state statute, regulations, and PUC orders) and that requirements under state regulatory programs that use such

instruments, such as state RPS, also differ. As a result, states may want to assess, when developing their state plan, how such existing instruments may interact with ERCs. For example, a state may want to assess how issuance of ERCs pursuant to a state plan may interact with compliance with a state RPS by entities affected under relevant state RPS regulations or PUC orders. The interaction of other instruments and ERCs may also impact existing or future arrangements in the private marketplace. Actions taken by states, separate from the design of their state plan, could address a number of these potential interactions. For example, **state RPS regulations that specify a REC for a MWh of RE [renewable energy] generation, and the attributes related to that MWh, may or may not explicitly or implicitly recognize that the holder of the REC is also entitled to the issuance of an ERC for a MWh of electricity generation from the eligible RE resource. This could impact existing and future RE power purchase agreements or REC purchase agreements.** Such interactions among existing instruments and ERCs could also impact how marketing claims are made in the voluntary RE market. How a state might choose to address these potential interactions will depend on a number of factors, including the utility regulatory structure in the state, existing statutory and regulatory requirements for state RPS, and existing RE power purchase agreements and REC contracts.¹⁸⁷

EPA explicitly stated that state regulators formulating rate based state implementation plans needed to address RPS rules and private contracts concerning the content of a REC, while at the same time clearly implying that it is EPA’s preferred view that the “reductions”—in generation, which are the CPP-relevant reductions, as well as, apparently, the “emission reductions”—are not in the RECs. CRS had a different interpretation, that the ERC determined the location

and use of avoided grid emissions from renewable energy for CPP compliance without disaggregating the attribute from the REC or affecting the claim of the REC owner that their generation avoids emissions:

An EGU that owns an ERC is able to report a reduced emissions rate as if that EGU had produced an extra MWh of emissions-free power. Since ERCs are transacted between RE generators and affected EGUs, it may be logical to think of the ERC as transferring the emissions rate of the RE generator to the EGU: the EGU that owns an ERC is able to report a reduced emissions rate as if the generation that actually occurs at the RE plant had occurred at that EGU, with an emissions factor of zero. But since ERCs are not only generated by activities that generate power, but rather by activities that avoid generation at affected generating units—including zero-emitting power generation, and also energy efficiency, transmission and distribution measures, demand-side management, etc.—we know that ERCs do not convey the emissions factor of zero-emitting generation. [. . .] RE generation [. . .] (like other ERC-qualifying measures) avoids emissions in the region where it is located by displacing (or, in the case of energy efficiency, avoiding the need for) generation at nearby emitting generators [. . .]. However, in order to report that avoided generation and emissions reductions for CPP compliance in a rate-based state, the nearby emitting generator [. . .] would need the corresponding ERC to adjust its rate. Instead, the ERC has been transferred to an out-of-state affected EGU [. . .], which is able to use the ERC to adjust its rate for CPP compliance.

[. . .] In other words, an ERC owner is effectively reporting that the avoided emissions caused by that MWh of RE occurred at their EGU for the purposes of compliance. The REC owner may still be able to claim that their RE generation avoids these emissions, which simply get used for compliance by ERC owner. In this case,

the REC claim is to avoided emissions as a benefit of RE consumption (“I use/deliver RE generation that avoids X emissions”). The ERC claim is a compliance claim to the avoided emissions for reporting generation (“the X avoided emissions from that RE generation occurred on my behalf for CPP compliance”). Both can be made simultaneously [. . .]. This is true because the CPP does not allocate or deliver RE or its attributes to specific customers for consumption claims.¹⁸⁸

EPA’s view on the reductions was presaged in the CPP proposed rules,¹⁸⁹ in which EPA explained how reductions achieved through the purchase of renewable energy are, under the Clean Air Act, reductions by the otherwise emitting source that is reducing its emissions by displacing its generation¹⁹⁰ and belong, without reference to RECs or any other environmental commodity, to the utility purchasing the substitute generation, or at least to the state achieving utility reductions through its plan.¹⁹¹ These “reductions” include pollutants beyond GHG.¹⁹²

EPA encouraged use of the existing REC measurement and compliance infrastructure for CPP ERC compliance, which confirmed EPA’s preference for two uses—state RPS and CPP ERC—for the same megawatt-hour of qualifying renewable generation.¹⁹³ WREGIS and other GISs at the time discussed whether GISs had a role in ERCs. But EPA understood that states might not want unfettered use of a megawatt-hour of qualifying renewable generation for an ERC, perhaps especially if there is an associated use of RPS compliance RECs.¹⁹⁴ EPA also seemed to have in mind that renewable generation could create an environmental commodity that was neither a REC nor an ERC.¹⁹⁵

Despite EPA’s stated preferences and interpretation of the Clean Air Act, a rate-based CPP state

implementation plan seeking to assign both ERCs and RECs to the same megawatt-hour of renewable generation would have presented contract and regulation seams issues for many states and other regulations.¹⁹⁶ Despite the strong arguments that could be presented in favor of a regulated utility not consuming RECs through use of ERCs, regulated entities in states with inclusive RECs definitions would likely not have been free from the risks presented by these and other seams without regulatory or legislative, changes to the RPS. EPA may have ignored the issue of contract definitions of RECs because there was not much that EPA or a state implementation plan could have done about it, but this did not make the potential for destruction of private party contract rights any less real. A state probably cannot constitutionally reallocate between parties the contract rights to those environmental attributes included in the REC that allowed use of, or retirement by, a megawatt-hour for CPP compliance or the attributes of an ERC.¹⁹⁷

EPA recognized that its proposed CPP presented significant double counting issues due to the potential overlap between state RPS programs.¹⁹⁸ EPA's statement that "interactions among existing instruments and ERCs could also impact how marketing claims are made in the voluntary RE market"¹⁹⁹ was an unhelpful understatement; states do not entirely regulate those marketing claims; the FTC also has jurisdiction.²⁰⁰ Realistically, the FTC might have revised its regulations to accord with EPA's views, although there would have been uncertainty before that process, and state truth in advertising law amendments, got underway and were resolved, presenting problems for those wishing to observe regulations and defend against private contract litigation in the interim. This also

makes very clear that an electric utility in receipt of the "avoidance" environmental attribute through purchase of renewable energy by virtue of the EPA's interpretation of the Clean Air Act probably remains in need of the RECs themselves in order to comply with other applicable federal regulation, notably the FTC Green Guides.

CONCLUSION

Full knowledge²⁰¹ of how RECs are property, that this property includes rights in overlapping subsets of environmental attributes relating to claims, fuel source, emissions signature, and avoided emissions, that this property is protected pursuant to and defined according to federal and state law and regulation, GISs, voluntary standards, and private contracts, that aspects of this property come into existence and can be extinguished at varying points of a long creation and property right transfer chain, is essential for anyone wishing to transact in RECs.

Throughout the arduous path in the development of RECs that is merely hinted at above, parties to agreements have had to address the next visible stage of policy development. RECs can be seen as a means to the end of providing society the benefits obtained by increased use of renewable energy resources. Policies to achieve such ends may shift in focus to zero emissions, or to federal laws replacing state laws. Even if such programs do not avail themselves of the rich legal structure that RECs can provide, such programs will need to address the existing rights of private parties and existing laws and regulations in a deep REC commodity and legal infrastructure. Contracting parties should be thinking about, seeking to understand, and preparing agreements that address the rights of par-

ties in RECs as they could be affected by all the possible disharmonies from existing and potential future programs.

ENDNOTES:

¹RECs also are, and have been, called “green tags,” “renewable energy credits,” “green attributes,” “tradeable renewable energy credits,” “alternative energy credits,” among many other names.

²GISs include the Electric Reliability Council of Texas (ERCOT), Michigan Renewable Energy Certification System (MIRECS), Midwest Renewable Energy Tracking System (M-RETS), North American Renewables Registry (NAR), New England Power Pool Generation Information System (NEPOOL GIS), North Carolina Renewable Energy Tracking System (NC-RETS), New York Generation Attribute Tracking System (NYGATS), PJM Generation Attribute Tracking System (PJM GATS), and Western Generation Information System (WREGIS). See also Info on tracking systems: <https://apx.com/renewable-registries-and-generation-attribute-tracking-systems/>.

³See, e.g., FTC Division of Enforcement Staff Letter dated Feb. 2, 2015, p. 3, avail. at http://www.ftc.gov/system/files/documents/public_statements/624571/150205gmpletter.pdf.

⁴New York Power Authority, *New York Power Authority Wind Power Agreements to Serve Government Customers in New York City* (Dec. 8, 2006), avail. at <https://web.archive.org/web/20090114041557/http://www.nypa.gov/press/2006/061208b.htm>. The NYPA negotiating team was thrilled by a lively visual encounter with renewable energy, the *Mission Impossible III* (2006) helicopter chase scene (through the San Gorgonio Pass Wind Farm outside of Palm Springs, California).

⁵House Committee on Environmental & Commerce, “The CLEAN Future Act,” p. 3 (Jan 8, 2020), avail. at <https://energycommerce.house.gov/sites/democrats.energycommerce.house.gov/files/documents/CLEAN%20Future%20Act%20Memo.pdf>; *E&C Leaders Release Framework Of The Clean Future Act, A Bold New Plan To Achieve A 100 Percent Clean Economy By 2050*, avail. at <https://energycommerce.house.gov/newsroom/press-releases/ec-leaders-release-framework-of-the-clean-future-act-a-bold-new-plan-to>.

⁶The U.S. Power Annex was jointly developed by ISDA and the EEI Contract Drafting Committee in 2003, an effort in which I participated, and is the EEI Master Power Purchase & Sale Agreement unchanged but for fitting into the ISDA framework, and appending a now long out of date *Mobile-Sierra* waiver. ISDA, *ISDA and EEI Announce North American Power Annex to ISDA Master Agreement* (August 7, 2003) avail. at <https://web.archive.org/web/20031203014235/https://www.isda.org/press/press080703.html>.

⁷Renewable Energy Certificates Annex to the EEI Master Power Purchase & Sale Agreement, Version 1.0 (Nov. 14, 2010), avail. at <https://www.eei.org/resourcesandmedia/Master%20Contract/EEI%20RECs%20Annex%20v1.pdf>. I co-chaired the subcommittee that drafted the EEI RECs Annex.

⁸Master Renewable Energy Certificate Purchase & Sale Agreement (v.1.0, 2007), avail. at <https://emahq.org/sites/default/files/ABA%20EMA%20ACORE%20Master%20RECs%20Agreement%20v1.0.doc>; discussed at length in Jeremy Weinstein, *The New ABA/EMA/ACORE Master Renewable Energy Certificate Trading Agreement*, chapter 10 in *Energy and Environmental Trading: U.S. Law and Taxation* (Andrea S. Kramer and Peter C. Fusaro eds., Cameron May 2008); see also Jeremy Weinstein, *On the Path to Renewable Energy Certificates Derivatives*, *Fut. & Derivs. L.Rep.* (Apr. 2007); Jeremy Weinstein, *The ABA/EMA/ACORE Master Renewable Energy Certificate Trading Agreement*, Bloomberg L.Rep.: Sustainable Energy, vol. 2 no. 9, p. 11 (Sept. 2009); Jeremy Weinstein, *Contracting for a Unified Renewable Energy Certificates Market*, Environmental Finance (Nov. 2006); Jeremy Weinstein and Dan Chartier, *Standardizing Renewable Energy Certificates Contracting*, Environmental Finance (May 2005). I co-chaired the working group that wrote the

agreement.

⁹WSPP Agreement, WSPP, Inc., First Revised Rate Schedule FERC No. 6, avail. at http://www.wspp.org/pages/documents/07_28_20_current_effective_agreement.pdf; see also *WSPP, Inc.* 139 FERC ¶ 61,061 (2012). I actively participated in the WSPP Contract Subcommittee drafting of Schedule R.

¹⁰E.g., NAESB, *Renewable Energy Certificate (RECs) Update* (Oct. 19, 2020), avail. at <https://www.naesb.org/pdf4/update102120w1.docx>.

¹¹I am co-chair of that drafting subcommittee.

¹²Likely future federal initiatives are catalogued in Select Committee on the Climate Crisis, Majority Staff Report, *Solving the Climate Crisis: The Congressional Action Plan for a Clean Energy Economy and a Healthy, Resilient, and Just America Majority Staff Report* (Jun. 2020), avail. at <https://climatecrisis.house.gov/report>.

¹³FERC, *WSPP, Inc., Order Conditionally Accepting Schedule R*, 139 FERC ¶ 61,061, para. 5 (2012).

¹⁴*American Ref-Fuel*, 105 FERC ¶ 61,004, para. 23 (2003): “States, in creating RECs, have the power to determine who owns the REC in the initial instance, and how they may be sold or traded . . .”

¹⁵FERC, *WSPP, Inc.*, 139 FERC ¶ 61,061, para. 18 (2012).

¹⁶*U.S. v. Oluwaseyi Adeyemi*, No. 19 CR 383, Plea Agreement p. 2 (N.D.Ill. 2020); see Lauraann Wood, Law360, *Trader Admits Shifting Energy Credits To His Own Company* (Feb. 25, 2020) avail. at <https://www.law360.com/articles/1247168/trader-admits-shifting-energy-credits-to-his-own-company>.

¹⁷*Appeal of Honeywell, Inc.*, Armed Services Board of Contract Appeals (ASBCA) No. 57779, avail. at <https://www.asbca.mil/Decisions/2013/57779%20Honeywell%20International,%20Inc.%208.7.13%20PUBLISHED.pdf> (“We agree . . . that SRECs are personal property, given their exclusive nature and transferability. . . .

New Jersey case law is consistent with that conclusion, characterizing SRECs as commodities subject to ownership. *Ownership of Renewable Energy Certificates*, 913 A.2d [825] at 827 [(NJ. Super. Ct. App. Div. 2007)].”). State utility and tax regulators have also characterized RECs as property. E.g. Oregon Public Utility Commission Orders 07-083 (Mar. 5, 2007); 10-022 (Jan. 26, 2010). See also Todd Jones, et al., *The Legal Basis of Renewable Energy Certificates*, Center for Resource Solutions (2015), avail. at <https://resource-solutions.org/wp-content/uploads/2015/07/The-Legal-Basis-for-RECs.pdf>.

¹⁸EPA, *Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units; Final Rule*, 80 Fed. Reg. 64662 at 64806 (Oct. 23, 2015).

¹⁹EPA Green Power Partnership, *Renewable Energy Certificates (RECs): What is a REC?*, avail. at <https://www.epa.gov/greenpower/renewable-energy-certificates-recs>.

²⁰EPA Green Power Partnership, *Offsets and RECs: What’s the Difference* (Feb. 2018), avail. at https://www.epa.gov/sites/production/files/2018-03/documents/gpp_guide_recs_offsets.pdf.

²¹Webster’s Encyclopedic Unabridged Dictionary of the English Language, p. 96 (1994).

²² <https://www.merriam-webster.com/dictionary/attribute>.

²³Black’s Law Dictionary (11th ed. 2019).

²⁴CFTC & SEC, *Joint Final Rule; Interpretations; Request for Comment on an Interpretation, Further Definition of “Swap,” . . .*, 77 Fed. Reg. 48208 at 48233-35 (Aug. 13, 2012) (citing, among others, comment letters I co-wrote); CFTC, *Final Rule, Adaptation of Regulations to Incorporate Swaps*, 77 Fed. Reg. 66288 at 66293-94 (Nov. 2, 2012) (citing, among others, comment letter I co-wrote). See also Jeremy Weinstein, *Renewable Energy and the Dodd-Frank Act*, Chapter 1 in Karen B. Wong, ed., *The Renewable Energy Law Review* (3rd ed. 2020); and Jeremy Weinstein, *CFTC Regulations of Trade Options*, *Fut. and Derivs. L. Rep.* (Nov. 2019). The CFTC’s interpretation of its then-new term “nonfinancial commodity” used in the DFA

definition of swap in the forward contract exclusion at CEA § 1a(47)(B)(ii), means a commodity that can be physically delivered and that is an “exempt” commodity or an “agricultural” commodity. Unlike “excluded” commodities, which generally are financial, exempt and agricultural commodities generally are nonfinancial, e.g., natural gas, nuclear fuels, energy, coal, metals, and environmental products. 77 Fed. Reg. at 48232. The CFTC under Chairman Gensler initially sought to regulate new environmental markets in credits for renewable energy and Carbon. After a bill that would have established a Carbon market under CFTC jurisdiction (H.R. 2454, the American Clean Energy and Security Act of 2009 (Waxman-Markey) Title III, Subtitles D and E) failed to pass, the CFTC made moves to seek control of environmental markets, e.g., in CFTC, *Notice of Intent . . . , To Undertake a Determination Whether the Carbon Financial Instrument Contract Offered for Trading on the Chicago Climate Exchange, Inc., Performs a Significant Price Discovery Function*, 74 Fed. Reg. 42052 (Aug. 20, 2009). CFTC, *Order Finding That the Carbon Financial Instrument Contract Offered for Trading . . . Does Not Perform a Significant Price Discovery Function*, 75 Fed. Reg. 23686 (April 28, 2010) (citing comment letter I wrote). The Dodd-Frank Act included many provisions rooted in Waxman-Markey, but did not give the CFTC “swaps” jurisdiction over Carbon or other environmental markets; rather § 750 of the Dodd-Frank Act merely established a study group, although that did not hinder the CFTC. Had it regulated renewable energy credits as swaps subject to mandatory clearing with resulting massive collateral posting requirements, as it proposed, the CFTC would have killed off renewable energy in the US. CPUC and CEC staff, who should have sought to protect the California Renewables Portfolio Standard, declined to do so, despite being fully and repeatedly briefed. Fortunately, Environmental Protection Agency staff and others pressed this point and the CFTC backed off. 77 Fed. Reg. 48233-35 (citing, among others, comment letters I co-wrote); CFTC, *Final Rule, Adaptation of Regulations to Incorporate Swaps*, 77 Fed. Reg. 66288 at 66293-94 (Nov. 2, 2012) (citing, among others, comment letter I co-

wrote). See also Jeremy Weinstein & Christopher Berendt, *The Nature of the Thing*, Environmental Finance, pp. 20-21 (Jun. 2011) (avail. at http://do.csjweinsteinlaw.com/pdfs/EF0611_pp,20-21.pdf).

²⁵77 Fed. Reg. at 48233 col. 1; CFTC Commissioner, then-General Counsel, Dan Berkovitz personal communication with the author at Carbon Forum North America, Washington, D.C. as co-panelists (Oct. 1, 2012).

²⁶77 Fed. Reg. at 48233-35. Emissions allowances issued by EPA may also be excluded from the definition of “swap” as an obligation of the federal government, CEA § 1a(47)(B)(ix), although the CFTC has “declined to address” this view (citing comment letter I wrote). 77 Fed. Reg. at 48235.

²⁷77 Fed. Reg. at 48234, n. 281; CEA § 6(c), § 9(a)(2); 17 C.F.R. §§ 180.1 and 180.2; 17 C.F.R. § 32.3(d).

²⁸The California Energy Commission has a process that does permit moving retired RECs into retirement for a subsequent retirement period. CEC, *Renewables Portfolio Standard Eligibility Commission Guidebook* (9th ed.), p. 66-67 (Jan. 2017).

²⁹There are many different circumstances and statements, by both consumers and providers, that may represent a claim on a REC. See Center for Resource Solutions. *Explanation of Green-e Energy Double-Claims Policy* Version 1, Published June 23, 2014. avail. at <http://resource-solutions.org/wp-content/uploads/2015/07/Explanation-of-Green-e-Energy-Double-Claims-Policy.pdf>.

³⁰FTC, *Final Rule, Guides for the Use of Environmental Marketing Claims*, 77 Fed. Reg. 62122 at 62124 and 62131-32 (Oct. 11, 2012), 16 C.F.R. § 260.15.

³¹FTC, *Guides for the Use of Environmental Marketing Claims; Carbon Offsets and Renewable Energy Certificates; Public Workshop*, 72 Fed. Reg. 66094 at 66094, col. 2 (Nov. 27, 2007).

³²CRS’s view is that due to the shared electric transmission and distribution network, the “grid,” use or delivery of renewable electricity can only

be determined contractually. The manner of production and associated benefits, or “attributes” of the generation, occur and can only be measured at the point of generation and are not delivered through the grid. They must be tracked separately from the energy in order to meet either compliance or voluntary consumer demand for renewable electricity or electricity with any of the individual attributes of renewable generation (e.g. greenhouse gas emissions profile). (personal communication from Todd Jones of CRS, Dec. 10, 2020).

³³“Certificate: A WREGIS Certificate (also called a Renewable Energy Credit (REC)) represents all Renewable and Environmental Attributes of MWh of electricity generation from a renewable energy Generating Unit registered with WREGIS or a Certificate imported from a Compatible Tracking System and converted to a WREGIS Certificate. The WREGIS system will create exactly one Certificate per MWh of generation that occurs from a registered Generating Unit or that is imported from a Compatible Tracking System. Disaggregation of Certificates is not currently allowed within WREGIS.” WREGIS Operating Rules, p. 9 (May 1, 2018).

“Renewable and Environmental Attributes: Any and all credits, benefits, emissions reductions, offsets, and allowances-howsoever titled-attributable to the generation from the Generating Unit, and its avoided emission of pollutants.³ Renewable and Environmental Attributes do not include (i) any energy, capacity, reliability, or other power attributes from the Generating Unit; (ii) production tax credits associated with the construction or operation of the Generating Unit and other financial incentives in the form of credits, reductions, or allowances associated with the Generating Unit that are applicable to a state, provincial, or federal income taxation obligation; (iii) fuel-related subsidies or ‘tipping fees’ that may be paid to the seller to accept certain fuels, or local subsidies received by the generator for the destruction of particular pre-existing pollutants or the promotion of local environmental benefits; or (iv) emission reduction credits encumbered or used by the Generating Unit for compliance with local, state, provincial, or fed-

eral operating and/or air quality permits.” WREGIS Operating Rules, p. 12 (May 1, 2018).

³⁴“Certificate: The term ‘Certificate,’ as used in this document, refers to an M-RETS Certificate of generation, or M-RETS Certificate. An M-RETS Certificate represents all the attributes from one MWh of electricity generation from a renewable Generating Unit registered with M-RETS or a Certificate imported from a Compatible Tracking System (CTS) and converted to an M-RETS Certificate. M-RETS will create exactly one Certificate per MWh of generation that occurs from a registered Generating Unit or that is imported from a CTS. See also definition of ‘Whole Certificate.’ ” M-RETS Operating Procedures, p. 41 (Jan. 1, 2020).

“Whole/ Whole Certificate: A ‘Whole Certificate’ is one where none of the renewable attributes have been separately sold, given, or otherwise transferred to another party by a deliberate act of the certificate owner. Renewable attributes shall include the environmental attributes that are defined as any and all Certificates, benefits, emissions reductions, offsets, and allowances, howsoever entitled, directly attributable to the generation from the Generating Unit(s). Renewable attributes do not include greenhouse gas avoidance Certificates based on the upstream capture of methane combined with the subsequent destruction of the methane. Individual states and provinces may create different definitions of renewable Certificates. M-RETS may consider revision of the definition of an M-RETS Certificate in the future if needed to better meet the needs of state and provincial programs. See also definition of ‘Certificate.’ ” M-RETS Operating Procedures, p. 45 (Jan. 1, 2020).

³⁵“Certificate: A REC or an EEC. The NAR Administrator may consider revision of the definition of a Certificate in the future if needed to better meet the needs of state and provincial programs. See also the definition of ‘Whole Certificate.’ ” North American Renewables Registry Operating Procedures, p. iv (November 2018).

“Environmental Attributes: Any and all credits, benefits, emissions, reductions, offsets, and allowances, howsoever entitled, attributable to generation from an Asset or savings from an

Energy Efficiency Project and its displacement of conventional energy generation.” North American Renewables Registry Operating Procedures, p. v (November 2018).

“Whole Certificate: A Whole Certificate is one where none of the Environmental Attributes have been separately sold, given, or otherwise transferred to another party by a deliberate act of the Certificate owner. See also definition of Certificate.” North American Renewables Registry Operating Procedures, p. ix (November 2018).

³⁶“Certificate(s): The term ‘Certificate,’ as used in this document, refers to a GATS electronic record of generation data representing all of the attributes from one MWh of electricity generation from a Generating Unit registered with the GATS tracking system or a Certificate imported from a Compatible Certificate Tracking System. Blocks of related Certificates may be grouped together to simplify Certificate transactions and for reporting purposes. The GATS will create exactly one Certificate per MWh of generation. Additionally, the GATS will create one Certificate for each MWh related to Certificates that are imported from a Compatible Certificate Tracking System based on the conversion rules established by the GATS Administrator. See also definition of ‘Whole Certificate.’” PJM-GATS Operating Rules, p. 4 (Sept. 24, 2020).

“Attribute: A characteristic of a generator, such as location, vintage, emissions output, fuel, state RPS program eligibility, etc.” PJM-GATS Operating Rules, p. 3 (Sept. 24, 2020).

“Whole Certificate: A ‘Whole Certificate’ is one where none of the renewable Attributes have been separately sold, given, or otherwise transferred to another party by a deliberate act of the Certificate owner. Renewable Attributes shall include the environmental Attributes which are defined as any and all credits, benefits, emissions reductions, offsets, and allowances, howsoever entitled, directly Attributable to the generation from the Generating Unit(s). Individual states may create different definitions of renewable Certificates. The GATS Administrator may consider revision of the definition of a Certificate in the future if needed to better meet the needs of state programs.” PJM-GATS Operating Rules, p.

11 (Sept. 24, 2020).

³⁷To the extent used, the word “attribute” refers to information related to the characteristics of the Renewable Energy Facility, such as technology type, ownership and location. North Carolina Renewable Energy Tracking System (NC-RETS) Operating Procedures, p. ix (Jan. 11, 2011).

³⁸The NVTREC User Manual (avail. at [http://www.nvtrec.com/\(S\(g4gwa41kvbhmlcyrzclfrph\)\)/Files/User_Manual.pdf](http://www.nvtrec.com/(S(g4gwa41kvbhmlcyrzclfrph))/Files/User_Manual.pdf)) does not mention attributes or define “Certificate.” NVTREC frequently asked questions avail. at [https://www.nvtrec.com/\(S\(g4gwa41kvbhmlcyrzclfrph\)\)/UI/Guest/FAQPage.aspx](https://www.nvtrec.com/(S(g4gwa41kvbhmlcyrzclfrph))/UI/Guest/FAQPage.aspx).

³⁹See, e.g., the NVTREC graphic at [https://www.nvtrec.com/\(S\(g4gwa41kvbhmlcyrzclfrph\)\)/Files/Credit%20Certification%20Flowchart.pdf](https://www.nvtrec.com/(S(g4gwa41kvbhmlcyrzclfrph))/Files/Credit%20Certification%20Flowchart.pdf).

⁴⁰E.g., WREGIS mandatory acknowledgment that RECs are not issued for station service avail. at <https://www.wecc.org/Administrative/WREGIS%20Acknowledgement%20of%20Station%20Service%20Form.pdf>

⁴¹E.g., WREGIS Operating Rules, p. 17 (May 1, 2018).

⁴²E.g., German Energy Agency, Blockchain in the integrated energy transition Study findings (Feb. 2019), avail. at https://www.dena.de/fileadmin/user_upload/dena-Studie_Blockchain_Integrierte_Energiewende_EN.pdf.

⁴³PUCN Docket 18-09008.

⁴⁴Green Mountain Power, *Press Release: GMP Revolutionizes Renewable Power Sharing with Peer-to-Peer Energy Sales Platform* (Nov. 25, 2019), avail. at <https://greenmountainpower.com/gmp-revolutionizes-renewable-power-sharing-with-peer-to-peer-energy-sales-platform-3/>; Green Mountain Power, *Share with Vermont Green*, avail. at <https://greenmountainpower.com/rebates-programs/helping-others/vermont-green/>.

⁴⁵See <http://www.dsireusa.org> for a national map.

⁴⁶E.g., CPUC, D. 11-01-025, *Decision Re-*

solving Petitions for Modification of Decision 10-03-021 Authorizing Use of Renewable Energy Credits For Compliance with the California Renewables Portfolio Standard and Lifting Stay and Moratorium Imposed by Decision 10-05-018 (January 13, 2011).

⁴⁷See National Conference of State Legislatures, *Renewable Portfolio Standards and Goals*, avail. at <https://www.ncsl.org/research/energy/renewable-portfolio-standards.aspx>; Database of State Incentives for Renewables & Efficiency, avail. at <https://www.dsireusa.org>; NREL, *Energy Analysis: Renewable Portfolio Standards*, avail. at <https://www.nrel.gov/analysis/rps.html>; Ari Peskoe and Kate Konschnik, *Minimizing Constitutional Risk: Crafting State Energy Policies that Can Withstand Constitutional Scrutiny* (Oct. 18, 2017), avail. at <https://statepowerproject.files.wordpress.com/2017/10/harvard-epi-minimizing-constitutional-risk-10-18-2017.pdf>; Ivan Gold and Nidhi Thakar, *A Survey of State Renewable Portfolio Standards: Square Pegs for Round Climate Change-Holes?*, 35 Wm. & Mary Envtl. L. & Pol'y Rev. 183 (2010), avail. at <https://scholarship.law.wm.edu/wmelp/vol35/iss1/5>.

⁴⁸See EPA, World Resources Institute, CRS, and NREL, *Guide to Purchasing Green Power* (Sept. 2018), avail. at https://www.epa.gov/sites/production/files/2016-01/documents/purchasing_guide_for_web.pdf; NREL *Energy Analysis: Voluntary Green Power Procurement*, avail. at <https://www.nrel.gov/analysis/green-power.html>.

⁴⁹*Allco Finance Limited v. Klee*, 861 F.3d 82, 93 (2d Cir. 2017) citing *Wheelabrator Lisbon, Inc. v. Connecticut Dept. of Public Utility Control*, 531 F.3d 183, 186 (2d Cir. 2008) (per curiam).

⁵⁰Jan Hamrin, *RECs Definitions and Tracking Mechanisms Used by State RPS Programs, Prepared for the State-Federal RPS Collaborative*, avail. at <https://www.cesa.org/wp-content/uploads/RECs-Attribute-Definitions-Hamrin-June-2014.pdf>.

⁵¹e.g., <https://www.mrets.org/registries/>. An illuminating graphic is avail. at <https://apx.com/wp-content/uploads/2020/10/Artboard-1REGAT-S-800x786.png>. Due to their cheapness and

plentitude, Texas wind RECs are often called “National RECs.” As the software vendor APX has built most of the GIS systems, inter-GIS transfers could eventually be achievable once double counting risk is reliably addressed. See Steve Kaelble, *Environmental Commodities for Dummies* (Wiley Publishing 2008). See Environmental Trading Network of North America, *Inter-Registry REC Transfers White Paper*, (Aug. 25, 2009), avail. at <https://resource-solutions.org/wp-content/uploads/2017/06/ETNNA-Inter-registry-Import-Export-final-8-25-09.pdf>.

⁵²See, e.g., 2020 Green-e Verification Report (2019 Data), avail. at <https://resource-solutions.org/g2020/>, and the National Renewable Energy Laboratory’s Status and Trends in the Voluntary Market (2019 data) (Sept. 23, 2020), avail. at <https://www.nrel.gov/docs/fy21osti/77915.pdf>. With respect to voluntary national standards, see also, Todd Jones, et al., *The Legal Basis of Renewable Energy Certificates*, Center for Resource Solutions (2015) p. 7: (“Despite any differences between states and voluntary programs in terms of eligibility requirements, RECs are uniformly used as the primary means of tracking grid-connected renewable electricity generation and the ownership of, and rights to claim, all of its associated attributes”), avail. at <https://resource-solutions.org/wp-content/uploads/2015/07/The-Legal-Basis-for-RECs.pdf>.

⁵³Cal. Pub. Utils. Code § 399.12(h) (emphasis supplied).

⁵⁴CPUC, *Decision On Definition And Attributes Of Renewable Energy Credits For Compliance With The California Renewables Portfolio Standard*, D. 08-08-028 (Aug. 21, 2008).

⁵⁵CPUC, *Decision On Definition And Attributes Of Renewable Energy Credits For Compliance With The California Renewables Portfolio Standard*, D. 08-08-028 App. B (Aug. 21, 2008).

⁵⁶Cal. Pub. Utils. Code § 399.(a)(7).

⁵⁷Avail. at <https://www.wecc.org/Corporate/WREGIS%20Operating%20Rules.pdf>.

⁵⁸Jeremy Weinstein, *A Western Renewables Marketplace*, Environmental Finance, p. 15 (Apr. 2004).

⁵⁹WREGIS Operating Rules, p. 8 (May 1, 2018) (emphasis supplied).

⁶⁰WREGIS Operating Rules, p. 9 (May 1, 2018) (emphasis supplied).

⁶¹WREGIS Operating Rules, p. 12 (May 1, 2018) (emphasis supplied).

⁶²WREGIS Operating Rules, p. 40 (May 1, 2018) (emphasis supplied).

⁶³WREGIS Operating Rules, p. 52 (May 1, 2018) (emphasis supplied).

⁶⁴FTC, *Final Rule, Guides for the Use of Environmental Marketing Claims*, 77 Fed. Reg. 62122 (Oct. 11, 2012).

⁶⁵15 U.S.C.A. § 45.

⁶⁶Example enforcement actions are posted by the FTC at <http://www.ftc.gov/news-events/media-resources/truth-advertising/green-guides>.

⁶⁷See Carolyn L. Carter, *Consumer Protection in the States: A 50-State Report on Unfair and Deceptive Acts and Practices Statutes* (Feb. 2009), avail. at http://www.nclc.org/images/pdf/udap/report_50_states.pdf.

⁶⁸77 Fed. Reg. at 62131-32, 16 C.F.R. § 260.15.

⁶⁹FTC Division of Enforcement Staff Letter dated Feb. 2, 2015, avail. at http://www.ftc.gov/system/files/documents/public_statements/624571/150205gmpletter.pdf.

⁷⁰FTC, Division of Enforcement, Feb. 5, 2015, letter to Jeffrey Behm [attorney for Green Mountain Power Corporation], pp. 2-4 (emphasis supplied).

⁷¹avail. at http://www.naag.org/issues/pdf/Green_Marketing_guidelines.pdf and https://www.epa.gov/sites/production/files/2018-05/documents/naag_0100.pdf.

⁷²NAAG Guidelines, p. 6 (emphasis supplied).

⁷³NAAG Guidelines, p. 25.

⁷⁴Todd Jones of Center for Resource Solutions takes a different position than I do with respect to the “behavior” component of RECs. As communicated to the author on Dec. 10, 2021,

“RECs represent and enable trading of generation attributes to characterize and account for consumed and delivered renewable electricity, rather than to enable trading of attributes between generators. Generating renewable energy can be directly observed/measured and cannot be changed by selling or consuming a REC. RECs are not used to transfer the behavior of generating renewable energy to another generator. For example, a coal plant cannot purchase RECs to report that it is generating renewable energy instead of coal power (and in so doing, avoid regulation). RECs also do not transfer the behavior of the generator to the REC purchaser. The benefits of the behavior of the generator (generation attributes) get transferred to the REC owner and become the generation benefits of their electricity (consumption).”

⁷⁵Todd Jones of Center for Resource Solutions disagrees that this analogy is entirely appropriate to describe RECs. As communicated to the author on Dec. 10, 2021, “The analogy here is actually more apt to describe carbon offsets (and even for that, it breaks down quickly). With offsets you are buying an action, an emissions reduction: ‘I am reducing emissions.’ In fact, you are paying someone else to reduce on your behalf. But in paying, you cause the emissions reduction to happen—the reducing activity must be additional, must not have occurred in a baseline scenario. So, the benefit conveyed in an offset is the right to say you’ve reduced emissions that cannot be claimed by the entity actually doing the reducing. This is not the same as RECs. With RECs, you are not buying an action, e.g. ‘I am generating renewable energy.’ With RECs you are buying the specified, renewable electricity generation itself, and the right to say that you are the exclusive owner, recipient, and consumer of that generation. The generator can still say that they are producing renewable energy. But only the REC owner can say that they are consuming it. If the recipient of the physical energy from the facility, an entity with a contract for physical energy from the facility without the REC, or any other consumer claims to be consuming that unit of renewable energy from that facility, or if the generator or the supplier claims/reports to be

delivering that same renewable energy to a different consumer, they would be ‘in breach of the agreement’ or ‘destroying’ the REC owner’s claim that she had purchased/used that renewable energy. Additionality, or demonstration that the REC buyer caused the generation (or ‘did the good deed’) and benefits to occur, is not required for this claim.”

⁷⁶“Green-e” is a registered trademark of Center for Resource Solutions.

⁷⁷E.g., CRS, *Explanation of Green-e Energy Double Claims Policy*, v. 1, June 23, 2014, avail. at <http://resource-solutions.org/wp-content/uploads/2015/07/Explanation-of-Green-e-Energy-Double-Claims-Policy.pdf>; CRS, *Guidelines for Renewable Energy Claims*, updated Feb. 26, 2015, avail. at <http://resource-solutions.org/wp-content/uploads/2015/07/Guidelines-for-Renewable-Energy-Claims.pdf>; CRS, *REC Best Practices in Public Claims*, v.1.1 Oct. 7, 2010, avail. at <http://www.green-e.org/docs/energy/Best%20Practices%20in%20Public%20Claims.pdf>.

⁷⁸Dozens of CRS letters to regulators are avail. at <https://resource-solutions.org/publications/>.

⁷⁹Idaho Power, Application to the Idaho Public Utilities Commission for an Order Authorizing the Retirement of its Green Tags, case IPC-E-08-024, para. 4 (2008). Long-term sellers should be aware of some nuances in the Green-e program. For example, resources must be less than 15 years old. There is a process to accept and approve PPAs that are longer than 15 years for use through the end of the contract term. But approval must happen within the first 12 months—late in the term will be too late. Another example is the Green-e program’s requirement that certified renewable energy and RECs include all carbon benefits. So in GHG-capped states, the Green-e program requires that allowances must be surrendered along with RECs. This means that in California, sellers of Green-e certified renewable energy must use the Voluntary Renewable Energy Program (VREP), which freely allocates and retires allowances on behalf of voluntary renewable energy, or in another jurisdiction that becomes subject to a cap without a similar policy

mechanism, and assuming the Green-e program’s policy continues in that jurisdiction, (currently priced) \$1 national wind RECs must come with about (currently priced) \$6.00 worth of allowances.

⁸⁰E.g., Georgia Public Service Commission, *Order Approving Clarification of Ownership of Renewable Energy Credits, In Re: Georgia Power Company’s 2015 Large Scale Solar Offering and Georgia Power Company’s Advanced Solar Initiative*, Docket nos. 34229 and 36325 (May 13, 2015), avail. at <https://psc.ga.gov/search/facts-document/?documentId=158531>.

⁸¹CRS comments sought to prevent states from using RECs for both rate-based EGU compliance under 111(d) and RPS compliance. p. 6 of CRS, Comments on the U.S. EPA’s Clean Power Plan, Section 111(d) (Dec. 1, 2014), avail. at https://resource-solutions.org/wp-content/uploads/2015/07/CenterforResourceSolutions_Comments_DocketID_EPA-HQ-OAR-2013-0602_12-1-2014.pdf.

⁸²E.g., CRS Comments on the Washington State Department of Commerce’s Proposed Revisions to WAC 194-37-110, 194-37-120, and 194-37-210 Related to RPS Implementation Letter from CRS to the Washington Department of Commerce (Jan. 30, 2015), avail. at <https://resource-solutions.org/wp-content/uploads/2015/07/CRS-comments-WA-1-15-Retirement.pdf>: “Industry best practice and the Green-e Energy Code of Conduct and Customer Disclosure Requirements both consider that REC Retirement occurs when a Certificate is used. Certificate Retirement: Retirement occurs when a REC is used by the owner of the REC. Use of a REC may include, but is not limited to, (1) use of a REC by an end use customer, marketer, generator, or utilities to comply with a statutory or regulatory requirement, (2) a public claim associated with the purchase of a REC by an end use customer, or (3) the sale of or public claim on any component attributes of a REC for any purpose. Once a REC is retired, it may not be sold, donated, or transferred to any other party. No party other than the owner may make claims associated with retired RECs.”

⁸³CRS, *Green-e Framework for Renewable*

Energy Certification (July 7, 2017). p. 19 (avail at <https://www.green-e.org/docs/energy/framework/Green-e%20Framework%20for%20Renewable%20Energy%20Certification.pdf>).

⁸⁴CRS, *Best Practices in Public Claims for Green Power Purchases and Sales* (Oct. 2010), avail. at <http://www.green-e.org/docs/energy/Best%20Practices%20in%20Public%20Claims.pdf>.

⁸⁵A client matter.

⁸⁶A client matter.

⁸⁷CEC, *2007 Renewable Portfolio Standard Verification Draft Staff Report*, p. 22-24 (Apr. 2011) CEC-300-2011-002-SD.

⁸⁸“Interpretation” as used here refers to four interpretations issued by the CFTC over a period of almost a decade: *Retail Commodity Transactions Involving Certain Digital Assets*, Final interpretive guidance, 85 Fed. Reg. 37734 (Jun. 24, 2020) (the “2020 Interpretation”); *Retail Commodity Transactions Involving Virtual Currency*, Proposed interpretation, 82 Fed. Reg. 60335 (Dec. 20, 2017) (the “2017 Proposed Guidance”); *Retail Commodity Transactions Under Commodity Exchange Act*, Interpretation, 78 Fed. Reg. 52426 (Aug. 23, 2013) (the “2013 Guidance”); *Retail Commodity Transactions Under Commodity Exchange Act*, Interpretation, 76 Fed. Reg. 77670 (Dec. 14, 2011). The CFTC’s Interpretation doesn’t really define when actual delivery occurs. Rather, it backs into the definition by identifying a threshold time limit (the statutory 28 days), groupings of certain factors, and example cases, where, if certain such factors are met before the time limit occurs, then actual delivery will have occurred. E.g., under the CFTC’s Interpretation, actual delivery would occur under the following facts: a retail customer purchases precious metals on a margined basis, and within 28 days, takes physical delivery via a depository that is unaffiliated with the seller (and meets certain criteria), and title to the metals is transferred to the customer. See example 2 in the 2013 Guidance at 52428, col. 3. However, if the facts are modified such that the title document failed to identify the quality specifications of the metals, actual delivery would not have occurred, for the purposes of the CEA (even though there

was evidence that the customer was the owner of the metals). See example 4 at *id*. The criteria for a depository are similar to that specified in the Model State Commodity Code (1985), and include a financial institution, a depository, the warrants or warehouse receipts of which are recognized for commodity delivery purposes on a designated contract market, or a U.S. (or U.S. agency)-licensed or regulated storage facility. See *id.* note 25 and accompanying text. The depository criteria were not met in the facts of *U.S. Commodity Futures Trading Commission v. Monex Credit Company*, 931 F.3d 966, Comm. Fut. L. Rep. (CCH) P 34538 (9th Cir. 2019), cert. denied, 141 S. Ct. 158, 207 L. Ed. 2d 1096 (2020), an enforcement action, where the Court agreed with the CFTC that actual delivery of precious metals to retail customers did not occur because “here, metals are in the broker’s chosen depository, never exchange hands, and are subject to the broker’s exclusive control, and customers have no substantial, non-contingent interests.” *Id.* at 974. The Court finds that “customers have no contractual rights to the metal; Monex, not customers, has a relationship with depositories; Monex maintains total control over accounts and can liquidate at any time in its own discretion; and the entire transaction is merely a book entry. . . . [A] sham delivery. . . . ‘[A]ctual delivery’ unambiguously requires the transfer of some degree of possession or control.” *Id.* at 975. *Monex* is cited in the 2020 Interpretation, in part as authority to de-emphasize the factor of title, and focus on possession and control. “As recognized by existing judicial precedent, . . . evidence of possession and control is most significant, while title may, in fact, connote elements of each.” 85 Fed. Reg. at 37737, col. 3 (footnote removed); see also, 85 Fed. Reg. 37735, col. 3; 85 Fed. Reg. 37742 col. 3. The CFTC has been consistent in not limiting itself to stated factors—citing its 2013 Guidance, it states that it will continue to “employ a functional approach and examine how the agreement, contract, or transaction is marketed, managed, and performed, instead of relying solely on language used by the parties in the agreement, contract, or transaction.” *Id.* While the “actual delivery” analysis is not applicable to a futures contract, it is interesting to

see how a pre-Dodd-Frank Act press release describes a physical settlement of REC futures- it states that “the first-ever physical delivery of a Renewable Energy Certificate (REC) futures contract” was completed on Aug. 5, 2009, where “100 CCFE Jul-09 REC NJ contracts, representing 10,000 megawatt hours (MWh) of New Jersey Class 1 RECs, expired and were physically delivered through the PJM Generation Attribute Tracking System (GATS). Delivery is a three consecutive business day process coordinated by The Clearing Corporation.” Element Markets, *Chicago Climate Futures Exchange Announces First Futures Delivery Of Renewable Energy Certificate* (Aug. 11, 2009), avail. at https://web.archive.org/web/20110710181600/http://www.elementmarkets.com/press_releases.html#20090811. Reporting described it as “[t]he actual delivery of the contracts consisted of shifting them in a virtual tracking system, but it was still a three-day process which involved registering the fulfillment of the contracts.” Leora Falk, *Futures Exchange Logs First Delivery Of Contracts for Renewable Energy Credits*, BNA, Alternative Investment Law Report (Aug. 19, 2009).

⁸⁹For example, with reference to the CFTC’s 2020 Interpretation discussed in the preceding footnote, a customer purchases 10 bitcoins using leverage arranged by the seller, and one week after the transaction is entered into, five bitcoins are transferred from seller to customer, and there is a record on the public ledger of a transfer from the seller’s blockchain address to the customer’s blockchain address, over which the customer maintains sole possession and control. Because less than the entire quantity of bitcoins under the transaction were transferred, actual delivery has not occurred. Example 1 of the 2020 Interpretation explains that “the entire quantity of the purchased virtual currency . . . [must be] transferred.” See 85 Fed. Reg. at 37743, col. 2. If two weeks later, the remaining bitcoins are transferred, then actual delivery occurred. If instead, the remaining bitcoins were not transferred until four weeks later (five weeks since the transaction), then, despite the customer being the owner of the bitcoins, actual delivery did not occur, for the purposes of the CEA, because some of the

bitcoins were not transferred until 35 days after the transaction, which is greater than the statutory period of 28 days. The 2020 Interpretation is focused on virtual currency, 85 Fed. Reg. at 37734, col. 2, and its hypothetical examples supersede the examples in the 2013 Guidance, with respect to virtual currency. 85 Fed. Reg. at 37737, col. 2. It does state however, “[i]n regards to other digital assets that are commodities, but do not serve as a medium of exchange or otherwise fall within the scope of this interpretive guidance at the time of the transaction, the Commission would continue to refer to the 2013 Guidance . . .” *Id.* (footnote omitted). Furthermore, the CFTC stated in its 2017 Proposed Guidance that “in interpreting the term actual delivery for the purposes of CEA section 2(c)(2)(D)(ii)(III)(aa), [it] will continue to follow the 2013 Guidance.” 82 Fed. Reg. at 60339, col. 2.

⁹⁰Even this seemingly straightforward step is capable of being disputed, e.g., *Colorado and Santa Fe Energy Co., LLC v. Nexant, Inc.*, Order Granting Motion to Dismiss with Leave to Amend, case 3-12-cv-0001-JSW doc. 34 (Sept. 25, 2012), not for citation (N.D. Cal.). I was the victorious defendant’s expert witness.

⁹¹Since the transaction will usually include a promise not to destroy the RECs by making claims about the renewable energy that could retire the REC, starting with not making claims before the transfer, and including the promise not to make claim after the transfer, that obligation will continue after transfer, but as a negative it is not a “physical step” remaining to be taken to transfer ownership.

⁹²Bankruptcy Code § 365 allows bankrupt companies to reject executory contracts; eventually case law may tell us the precise moment in this slow-motion transfer when a contract to transfer RECs is no longer executory.

⁹³Although the nature of ownership of RECs as personal property may present more complications than what may be the case for a physical bar of gold or a bearer bond, they present far less complications than what may be the case for real property. Thomas Bergen and Paul Haskell,

Preface to *Estates in Land and Future Interests* (2d. ed. 1984).

⁹⁴E.g., Draft Notes from Institutional Committee Meeting (Jan. 13, 2004), Horton Grand Hotel, San Diego.

⁹⁵Cal. Civ. Code § 954 provides: “A thing in action, arising out of the violation of a right or out of an obligation, may be transferred by the owner.” Civ. Code § 1458 says: “A right arising out of an obligation is the property of the person to whom it is due, and may be transferred as such.” See *Belden v. Farmers’ & Mechanics’ Bank of Healdsburg*, 16 Cal. App. 452, 459, 118 P. 449 (3d Dist. 1911) (lessee’s right to reimbursement from lessor “was a chose in action, or a right to recover money by a judicial proceeding” and hence assignable); *Grain v. Aldrich*, 38 Cal. 514, 520, 1869 WL 789 (1869)(consent of obligor not required for assignment of claim). Civ. Code § 1044 states: “Property of any kind may be transferred, except as otherwise provided by this Article.” See *Johnston v. Twentieth Century-Fox Film Corp.*, 82 Cal. App. 2d 796, 813-14, 187 P.2d 474, 76 U.S.P.Q. 131 (2d Dist. 1947) (“Many items of property are assignable under [§]1044, which were not assignable at common law.”). Only “a mere possibility, not coupled with an interest cannot be transferred.” (Civ. Code § 1045; but see *Bridge v. Kedon*, 163 Cal. 493, 496, 126 P. 149 (1912) (even the mere possibility of a future inheritance is assignable notwithstanding § 1045); *Bibend v. Liverpool & London Fire & Life Ins. Co.*, 30 Cal. 78, 86, 1866 WL 694 (1866)(courts will enforce “assignments of trusts and possibilities of trusts, and contingent interests and expectancies, . . . as well as . . . ‘things which have no present actual or potential existence, but rest in mere possibility . . .’”). California Courts will enforce assignment of all types of rights and property (*U.S. v. Stonehill*, 83 F.3d 1156, 1159-60, 96-1 U.S. Tax Cas. (CCH) P 50318, 77 A.F.T.R.2d 96-2212 (9th Cir. 1996) (lawsuit against California municipality for depressing value of property through illegal zoning procedures held assignable); *Hopkins v. Contra Costa County*, 106 Cal. 566, 572, 39 P. 933 (1895)(right to recover, from insolvent county road fund, costs of work on road running

through owner’s land held assignable)), even if the rights at issue call themselves unassignable. See *National Bank of Mills & Co. v. Herold*, 74 Cal. 603, 608, 16 P. 507 (1888) (rights to payment under non-negotiable California State Controller’s warrant assignable); *Trubowitch v. Riverbank Canning Co.*, 30 Cal. 2d 335, 339, 182 P.2d 182 (1947)(“It is established that a provision in a contract or a rule of law against assignment does not preclude the assignment of money due or to become due under the contract.”); Civ. Code § 1459 (non-negotiable instruments transferred by endorsement). California law strongly favors assignments of rights (*Robert H. Jacobs, Inc. v. Westoaks Realtors, Inc.*, 159 Cal. App. 3d 637, 645, 205 Cal. Rptr. 620 (2d Dist. 1984)(“California law evidences a policy in favor of the free transferability of all types of property.”); *Collier v. Oelke*, 202 Cal. App. 2d 843, 845-47, 21 Cal. Rptr. 140 (4th Dist. 1962)(citing broad statutory language favoring assignments, holds easements in gross are assignable)).

⁹⁶Cf. Grant Gilmore, *Security Interests in Personal Property* § 12.9 (1965). The “situs” of a “change in rights” is a subject of jurisprudential debate. Jerome Weinstein, *Problems in the Field of State Securities Regulation*, 3 B.C.L.Rev. 381, 410 n. 126 (1962), avail. at <https://lawdigitalcommons.bc.edu/bclr/vol3/iss3/4/>

⁹⁷*American Ref-Fuel*, 105 FERC ¶ 61,004 (2003); *Windham Solar LLC and Allco Finance Limited*, 156 FERC ¶ 61,042 at para. 6 (2016).

⁹⁸E.g., CPUC Decision, R. 06-02-012 and Order 9696; Ida. PUC, Case GNR E-11-03 Order 32697, p. 47; Ore. PUC, Order No. 05-1229; Utah PSC, Order in Docket No. 12-035-100; Wash. PUC, Docket No. 20000-250-EA-06; Wyo. PSC, Docket No. 20000-250-EA-06.

⁹⁹In *Wheelabrator Lisbon, Inc. v. Connecticut Dept. of Public Utility Control*, 531 F.3d 183, 186 (2d Cir. 2008), the Second Circuit found that a state’s determination that the utility purchaser on a long-term PPA was **not** federally pre-empted by PURPA and that *American Ref-Fuel*, 105 FERC ¶ 61,004 (2003) did not mean the RECs belong to the selling QF. The QF had demanded that the RECs, which came into existence in Con-

nnecticut statute after the QF PPA was executed, belonged to the selling QF rather than the purchasing utility, and the Connecticut Department of Public Utility Control assigned found that the RECs were transferred to the purchasing utility by the PPA. See also *In re Ownership of Renewable Energy Certificates ("RECs")*, 389 N.J. Super. 481, 913 A.2d 825, 828 (App. Div. 2007), (“The issue of initial ownership of Renewable Energy Certificates for existing contracts that did not anticipate their creation has arisen in at least nine other states. Each state has ruled as the BPU did here; namely, that as applied to existing contracts for the sale of power to utilities by renewable energy producers, the certificates are the property of the purchasing utility rather than the producer. Edward A. Holt et al., *Who Owns Renewable Energy Certificates? An Exploration of Policy Options and Practice*, at xiv [LBNL-59965] (Ernest Orlando Lawrence Berkeley National Laboratory 2006).”).

¹⁰⁰Cal. Pub. Utils. Code § 399.16(a)(6).

¹⁰¹See EPA, World Resources Institute, CRS, and NREL, *Guide to Purchasing Green Power*, p. 4-5 (Sept. 2018), avail. at https://www.epa.gov/sites/production/files/2016-01/documents/purchasing_guide_for_web.pdf. A list of programs is avail. at <https://www.nrel.gov/analysis/assets/docs/utility-green-pricing-program-list.xlsx>. NREL gives an annual program ranking at <https://www.nrel.gov/analysis/green-power.html>.

¹⁰²Pacific Power’s Blue Sky renewable energy program keeps delivering for customers (Nov. 9, 2020) (“Blue Sky allows customers to match their energy usage with the purchase of renewable energy credits (RECs).”), avail. at <https://www.pacificpower.net/about/newsroom/news-releases/pp-blue-sky-program-keeps-delivering-for-customers.html>.

¹⁰³Individual retail customers are not generally in a position to issue press releases concerning their participation in a customer choice program, and a customer’s porch light looks the same with or without customer choice program participation. These customer REC claims are not publicly made as external signifiers. Every commodity has a use value, exchange value, and a

sign value. Jean Baudrillard, *For a Critique of the Political Economy of the Sign*, tr. by Charles Levin (Telos Press 1981). The use value of accurately telling the time is no greater in a \$20 digital watch than in a \$15,000 Cartier tank watch, but the sign value about its wearer to third parties is different. Utility customer choice programs deliver a commodity with no exchange value, no additional use value in terms of light and heat, and very limited sign value beyond potential stickers for program participants, and therefore in terms of providing anonymous environmental protection as a use value to the customer present especial interest as a commodity.

¹⁰⁴E.g., “With Light Green, 60% of your electricity service is from renewable sources (currently 60%), while being cost competitive to PG&E With Deep Green, 100% of your electricity service is from zero-emission solar and wind sources in California. With Local Sol, 100% of your electricity service is from locally-produced solar power from the Novato Cooley Quarry solar farm.” Marin Clean Energy, *Clean Energy Options for your home*, avail. at <https://www.mcecleanenergy.org/residential/#choices>.

¹⁰⁵See Drew Stilson, et al., Environmental Defense Fund, *Turning Climate Commitment into Results: December 2020 Analysis*, avail. at https://www.edf.org/sites/default/files/documents/FINAL_State%20Emission%20Gap%20Analysis.pdf.

¹⁰⁶California Senate Bill No. 100 (Sept. 10, 2018), avail. at https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201720180SB100.

¹⁰⁷Duke Energy, *Achieving a Net Zero Carbon Future, Duke Energy 2020 Climate Report*, p. 18, avail. at https://www.duke-energy.com/_media/pdfs/our-company/climate-report-2020.pdf.

¹⁰⁸See discussion below.

¹⁰⁹An example of California’s highly inclusive view is set forth in CPUC, *Decision On Definition And Attributes Of Renewable Energy Credits For Compliance With The California Renewables Portfolio Standard*, D. 08-08-028, at 26 (“The REC, in sum, may be available for

multiple purposes, but may be used for only one of them.”); App. B (Aug. 21, 2008).

¹¹⁰CPUC, *Decision on Definition and Attributes of Renewable Energy Credits for Compliance with the California Renewables Portfolio Standard*, D. 08-08-028, p. 35 n. 70 (Aug. 21, 2008). Likewise, the WREGIS Operating Rules provide on pp. 4-5, n. 2: “Avoided emissions may or may not have any value for complying with any local, state, provincial, or federal GHG regulatory program. Although avoided emissions are included in the definition of a WREGIS Certificate, this definition does not create any right to use those avoided emissions to comply with any GHG regulatory program.”

¹¹¹CPUC, *Decision on Definition and Attributes of Renewable Energy Credits for Compliance with the California Renewables Portfolio Standard*, D. 08-08-028 p. 24 (Aug. 21, 2008). The CPUC continued, “Thus—assuming that [the California Air Resources Board] adopts this analysis—our characterization of the REC will not require any RPS-eligible generation with zero GHG emissions to need allowances when delivered to the California grid.” *Id.*

¹¹²CRS agrees with the CPUC that there is no net change to emissions at regulated sources due to renewable energy generation under a GHG cap, and as such, the avoided emissions at regulated units associated with renewable energy generation are equal to zero. See Todd Jones and Noah Bucon, CRS, *Corporate and Voluntary Renewable Energy in State Greenhouse Gas Policy An Air Regulator’s Guide*, p. 6-7, 18 (Oct. 17, 2017), avail. at <https://resource-solutions.org/wp-content/uploads/2017/10/Corporate-and-Voluntary-RE-in-State-GHG-Policy.pdf>

¹¹³See Todd Jones and Noah Bucon, CRS, *Corporate and Voluntary Renewable Energy in State Greenhouse Gas Policy An Air Regulator’s Guide*, p. 4 (Oct. 17, 2017), avail. at <https://resource-solutions.org/wp-content/uploads/2017/10/Corporate-and-Voluntary-RE-in-State-GHG-Policy.pdf>.

¹¹⁴See Todd Jones and Noah Bucon, CRS, *Corporate and Voluntary Renewable Energy in State Greenhouse Gas Policy An Air Regulator’s*

Guide, p. 6-7, 18 (Oct. 17, 2017), avail. at <https://resource-solutions.org/wp-content/uploads/2017/10/Corporate-and-Voluntary-RE-in-State-GHG-Policy.pdf>

¹¹⁵See Todd Jones and Noah Bucon, CRS, *Corporate and Voluntary Renewable Energy in State Greenhouse Gas Policy An Air Regulator’s Guide*, p. 14 (Oct. 17, 2017), avail. at <https://resource-solutions.org/wp-content/uploads/2017/10/Corporate-and-Voluntary-RE-in-State-GHG-Policy.pdf>.

¹¹⁶See Todd Jones, et al., *The Legal Basis of Renewable Energy Certificates*, Center for Resource Solutions (2015), avail. at <https://resource-solutions.org/wp-content/uploads/2015/07/The-Legal-Basis-for-RECs.pdf>.

¹¹⁷California is one example. See Cal. Pub. Util. Code § 399.11(b)(4).

¹¹⁸The form also enabled independent separation of many of the other attributes in a REC through a disclosure-driven model. *See also* Jeremy Weinstein & Christopher Berendt, *The Nature of the Thing*, Environmental Finance (Jun. 2011) pp. 20-21 (avail. at http://docsjweinsteinlaw.com/pdfs/EF0611_pp.20-21.pdf). The form is avail. at <https://emahq.org/sites/default/files/ABA%20EMA%20ACORE%20Master%20RECs%20Agreement%20v1.0.doc> and is discussed at length in Jeremy Weinstein, *The New ABA/EMA/ACORE Master Renewable Energy Certificate Trading Agreement*, chapter 10 in *Energy and Environmental Trading: U.S. Law and Taxation* (Andrea S. Kramer and Peter C. Fusaro eds., Cameron May 2008).

¹¹⁹The Account Holder transfers the certificate to its Reserve Subaccount and then conducts transactions outside of WREGIS for the distinct subset of Renewable and Environmental Attributes. WREGIS Operating Rules 18.1 p. 52.

¹²⁰See Todd Jones and Noah Bucon, CRS, *Corporate and Voluntary Renewable Energy in State Greenhouse Gas Policy An Air Regulator’s Guide*, table on p. 8 (Oct. 17, 2017), avail. at <https://resource-solutions.org/wp-content/uploads/2017/10/Corporate-and-Voluntary-RE-in-State-GHG-Policy.pdf>.

¹²¹See Todd Jones and Noah Bucon, CRS,

Corporate and Voluntary Renewable Energy in State Greenhouse Gas Policy An Air Regulator's Guide, table on p. 17 (Oct. 17, 2017), avail. at <https://resource-solutions.org/wp-content/uploads/2017/10/Corporate-and-Voluntary-RE-in-State-GHG-Policy.pdf>.

¹²²EPA Green Power Partnership, *Offsets and RECs: What's the Difference* (Feb. 2018), avail. at https://www.epa.gov/sites/production/files/2018-03/documents/gpp_guide_recs_offsets.pdf. EPA provides a table showing differences between offsets and RECs at <https://www.epa.gov/greenpower/carbon-footprint-reduction-instruments>.

¹²³EPA Green Power Partnership, *Offsets and RECs: What's the Difference* p. 3 (Feb. 2018), avail. at https://www.epa.gov/sites/production/files/2018-03/documents/gpp_guide_recs_offsets.pdf.

¹²⁴Taskforce on Scaling Voluntary Carbon Markets, Consultation Paper (Nov. 2020), avail. at https://www.iif.com/Portals/1/Files/TSVCM_Consultation_Document.pdf; website: <https://www.iif.com/tsvcm>. See Financial Times, *Carney calls for '\$100bn a year' global carbon offset market* (Dec. 2, 2020), avail. at <https://www.ft.com/content/8ed608b2-25c8-48d2-9653-c447adbd538f>. The Carney Report is an excellent explanation of the voluntary Carbon offset marketplace and its development. Sadly, there is little in the Carney Report that wouldn't have looked the same had it been written 10 years ago. See the excellent reporting of the state of the voluntary Carbon market, with annual reports for each year since 2007, by Forest Trend's Ecosystem Marketplace, avail. at <https://www.ecosystemmarketplace.com/carbon-markets/>; House of Commons Environmental Audit Committee, *The Voluntary Carbon Offset Market, Sixth Report of Session 2006-07, Report* (2007) (299 pages) avail. at https://publications.parliament.uk/pa/cm200607/cms_elect/cmenvaud/331/331.pdf; Alexandre Kossoy and Phillippe Ambrosi, *World Bank Carbon Finance Unit, State and Trends of the Carbon Market 2010* (primarily concerning Kyoto Protocol flexible mechanisms trading), avail. at <https://openknowledge.worldbank.org/handle/10986/13401>. An example of how the voluntary market

has long gravitated toward robust structures is Talitha Haller and Gabriel Thoumi, *Financial Accounting for Forestry Carbon Offsets* (2009) avail. at https://www.ecosystemmarketplace.com/wp-content/uploads/archive/documents/Doc_65.pdf. The Carney Report suggests setting up further global governance bodies and standards. This would likely be counter-productive and stifling. Voluntary offset markets have not failed because those working in them have not done great work, and need Mr. Carney to ride to the rescue with more standards and more governance, but because several highly influential environmental NGOs hate offsets and campaign against them and the companies that use them. They accuse companies using them of "green-washing," and write attack pieces, like Greenpeace, *Carbon Scam: Noel Kempff Climate Action Project and the Push for Sub-national Forest Offsets* (Oct. 2009), avail. at https://www.greenpeace.org/usa/wp-content/uploads/legacy/Global_usa/report/2010/1/carbon-scam-noel-kempff-climate.pdf; Tim Hirsch, BBC, *Carbon Trading in Bolivia* (Nov. 10, 2000), avail. at <http://news.bbc.co.uk/2/hi/americas/1016598.stm>. The discrediting problems were primarily with limited high-profile players, such as CCX, e.g., CFTC, *Order Finding That the Carbon Financial Instrument Contract Offered for Trading . . . Does Not Perform a Significant Price Discovery Function*, 75 Fed. Reg. 23686 (April 28, 2010), and with UN compliance failures, e.g., New York Times, Nathaniel Gronewold, *Secretive U.N. board awards lucrative credits with few rules barring conflicts*, Apr. 7, 2009, avail. at <https://archive.nytimes.com/www.nytimes.com/cwire/2009/04/07/07climatewire-secretive-un-board-awards-lucrative-credits-10458.html?pagewanted=all>, not voluntary markets, but those are not major voluntary market failures that need "more governance" to be fixed. Voluntary offset markets may just not be able to overcome the intense loathing some influential NGOs have for Carbon offsets in any context. Greenpeace International's virulent campaign to prevent the possibility of Russian and Canadian forestry offsets in international climate agreements, e.g., Bill Hare, Greenpeace International, *Undermining the Kyoto Protocol: Environmental Effectiveness versus Political Ex-*

pediency (1998); Greenpeace International, *Should Forests and Other Land Use Activities be Allowed in the CDM* (June 2000), helped torpedo the then-good prospects for an international climate treaty in 2000; the perfect was such an enemy of the good that the current debate concerning U.S. participation in the Paris climate accords should be put in the context of the Paris agreement coming 16 years after, and being far weaker than, what Greenpeace helped knock off the table in 2000. See Council on Foreign Relations, *Global Climate Agreements: Successes and Failures* (Nov. 4, 2020) avail. at <https://www.cfr.org/backgrounder/paris-global-climate-change-agreements> and timeline at <https://www.cfr.org/timeline/un-climate-talks>; New York Times, Colin Sullivan, *EDF Chief: ‘Shrillness’ of Greens Contributed to Climate Bill’s Failure in Washington*, Apr. 5, 2011, avail. at <https://archive.nytimes.com/www.nytimes.com/gwire/2011/04/05/greenwire-edf-chief-shrillness-of-greens-contributed-to-37964.html>. NGOs prevailed on California legislators to propose to outlaw Carbon credits that came from other state programs or the United Nations. CRS California Market Advisory California Senate Bill 722 (Steinberg), avail. at <http://www.resource-solutions.org/pressreleases/2009/061809.htm>. Despite the fervent wishes of Greenpeace and some other NGOs, offsets are present, and belong, in U.S. climate policy and programs, including California’s AB32. 17 CCR § 95970 et seq.

¹²⁵n.b. CO₂e = equivalent emissions of Carbon dioxide.

¹²⁶Todd Jones and Noah Bucon, CRS, *Corporate and Voluntary Renewable Energy in State Greenhouse Gas Policy An Air Regulator’s Guide*, table on p. 16-17 (Oct. 17, 2017), avail. at <https://resource-solutions.org/wp-content/uploads/2017/10/Corporate-and-Voluntary-RE-in-State-GHG-Policy.pdf>.

¹²⁷CRS *Renewable Energy Certificates, Carbon Offsets, and Carbon Claims Best Practices and Frequently Asked Questions* (Apr. 9, 2012), avail. at <https://resource-solutions.org/wp-content/uploads/2015/08/RECsOffsetsQA.pdf>; The Environmental Tracking Network of North America, *The Intersection between Carbon,*

RECs, and Tracking: Accounting and Tracking the Carbon Attributes of Renewable Energy,” avail. at <http://etnna.org/images/PDFs/Intersection%20btwn%20Carbon%20RECs%20and%20Tracking.pdf>.

¹²⁸The Offset Quality Initiative (which was The Climate Trust, the Pew Center on Global Climate Change, the California Climate Action Registry, the Environmental Resources Trust, the Greenhouse Gas Management Institute, and The Climate Group), *Maintaining Carbon Market Integrity: Why Renewable Energy Certificates Are Not Offsets*, avail. at <https://ghginstitute.org/wp-content/uploads/2010/01/OQI-REC-Brief-Web-Jun09.pdf>.

¹²⁹Center for Resource Solutions. *The Green-e Climate Standard v.2.1*, § 5.1e(e) (p. 8), avail. at https://www.green-e.org/docs/climate/Green-eClimateStandard_V2.1.pdf.

¹³⁰Id. p. 17.

¹³¹CARB, Compliance Offset Protocol Livestock Projects Capturing and Destroying Methane from Manure Management Systems Adopted: November 14, 2014 avail. at <https://ww2.arb.ca.gov/our-work/programs/compliance-offset-program/compliance-offset-protocols/livestock-projects>.

¹³²E.g., CPUC, Resolution G-3410 (June 12, 2008), Advice Letter 2846-G/3075-E, Pacific Gas and Electric Company, June 27, 2007, ClimateSmart Manure Management Project Reporting Protocol in Compliance with Decision 06-12-032 (I was one of Pacific Gas & Electric’s counsel in connection with writing this Advice Letter).

¹³³Intergovernmental Panel on Climate Change, *AR5: Fifth Assessment Report, Climate Change 2014: Synthesis Report*, p. 87 (2014), avail. at <https://archive.ipcc.ch/report/ar5/syr/>.

¹³⁴CPUC, *Decision on Definition and Attributes of Renewable Energy Credits for Compliance with the California Renewables Portfolio Standard*, D. 08-08-028, App. B (Aug. 21, 2008).

¹³⁵E.g., CPUC, Resolution G-3410 (June 12, 2008), Advice Letter 2846-G/3075-E, Pacific Gas and Electric Company, June 27, 2007, ClimateSmart Manure Management Project Reporting

Protocol in Compliance with Decision 06-12-032.

¹³⁶Cal. Pub. Util. Code § 399.12.6(f). CEC regulation provides: “If the biomethane source is not required by law to capture and destroy the methane produced by the biomethane source, a POU [public utility] or intermediary party to a biomethane procurement contract, including the electrical generator, may make marketing, regulatory, or retail claim of GHG reduction related to the destruction of methane associated with the biomethane procurement contract only if one of the following applies: 1) The environmental attributes associated with the capture and destruction of the biomethane are transferred to the [public utility] and retired on behalf of its customers consuming the electricity associated with the use of biomethane and not resold. 2) The biomethane procurement contract does not allow the biomethane source to market separately the environmental attributes associated with the capture and destruction of the biomethane sold under the contract, and the attributes are retired by the POU on behalf of its customers, or by the intermediary party, and not resold. If the POU or intermediary party to a biomethane procurement contract, including the electrical generator, makes a regulatory, marketing, or retail claim of GHG reductions related to the destruction of methane, the POU must demonstrate that the attributes associated with methane destruction are retired and not resold by demonstrating both of the following to the Energy Commission: 1) The biomethane source is registered with a GHG project verification program and registry. 2) Carbon credits or offsets have been retired in a voluntary offset program on behalf of the POU’s customers consuming the electricity associated with the use of biomethane.” CEC, *Renewables Portfolio Standard Eligibility Commission Guidebook* (9th ed.), pp. 12-13 (2017).

¹³⁷FTC, *Proposed Revisions to Guidelines, Guides for the Use of Environmental Claims in Marketing*, 75 Fed. Reg. 63552 at 63595-97 (Oct. 15, 2010). FTC, *Guides for the Use of Environmental Marketing Claims; Carbon Offsets and Renewable Energy Certificates; Public Workshop, Announcement of public workshop; request*

for public comment, 72 Fed. Reg. 66094 (Nov. 27, 2007); FTC, *Guides for the Use of Environmental Marketing Claims, Request for public comment; announcement of public meetings*, 72 Fed. Reg. 66091 (Nov. 27, 2007). Workshop materials avail. at <https://web.archive.org/web/20101005104109/http://www.ftc.gov:80/bcp/workshops/carbonoffsets/>.

¹³⁸See Council on Environmental Quality, *Revised Draft Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in NEPA Reviews*, 79 Fed. Reg. 77802 at 77828 n. 44 (Dec. 24, 2014).

¹³⁹These could include environmental additionality (that the RECs purchase was a cause of, or impetus for, the development of the new renewable energy resource); financial or investment additionality (that the new renewable energy resource could not have been successfully developed or would not have had an acceptable rate of return for its investors but for the RECs purchase); regulatory or legal additionality (that the RECs purchase caused or is causing environmental improvement and global warming mitigation in excess of what is required by law); Technological additionality (that the RECs purchase promoted or caused the technological advancement inherent in the construction, installation, or operation of the new renewable energy resource); project additionality (that the commitment to purchases RECs was before the new renewable energy resource became commercially operational); barriers additionality (that the RECs purchase contributed to the overcoming of local opposition to the new renewable energy resource); and performance additionality (that the RECs purchase improved the new renewable energy resource’s performance or output).

¹⁴⁰E.g., Environmental Defense Fund, *Cooperative Mechanisms Under the Kyoto Protocol*, p. 39 (1998); Ertel & Egelston, *COP 6- Big Decisions or Big Disappointment*, Environmental Finance (Jun. 2000); CFTC, *Order Finding That the Carbon Financial Instrument Contract Offered for Trading . . . Does Not Perform a Significant Price Discovery Function*, 75 Fed. Reg. 23686 at 23689, n. 18 (April 28, 2010) (citing

comment letter I wrote). Federal regulatory definitions of “additionality” are at Dept. Interior, *Notice of Final Policy, Endangered and Threatened Wildlife and Plants*, 81 Fed. Reg. 95316 at 95339 col. 2, 95341 col. 3, 95342 col. 1, 95346 col. 2 (Dec. 27, 2016);

¹⁴¹See CRS *Additionality and Renewable Energy Certificates: Understanding the value of REC claims* (March 7, 2016) Avail. at <https://resource-solutions.org/wp-content/uploads/2016/03/RECs-and-Additionality.pdf>. Also see Mary Sotos, *Greenhouse Gas Protocol: GHG Protocol Scope 2 Guidance* (n.d.) pg. 90-1. avail. at http://ghgprotocol.org/scope_2_guidance. Also see Tawney et al. (April 2018). *Describing Purchaser Impact in U.S. Voluntary Renewable Energy Markets.* pg. 2, 7-9. Avail. at https://www.epa.gov/sites/production/files/2018-06/documents/gpp_describing_purchaser_impact.pdf.

¹⁴²There is no standard for “additionality” in renewable energy markets, and the activity may not pass offset-type additionality tests. There is broad recognition that impact, broadly defined, is multi-dimensional. See Letha Tawney et al. (April 2018). *Describing Purchaser Impact in U.S. Voluntary Renewable Energy Markets.* pg. 2, 7-9, avail. at https://www.epa.gov/sites/production/files/2018-06/documents/gpp_describing_purchaser_impact.pdf.

¹⁴³17 CCR § 95111(a)(4) of California’s Mandatory Reporting Regulation (MRR). § 95111(g)(1)(M)(3) of the MRR requires reporting entities to report the serial numbers of RECs associated with specified renewable imports and whether or not they have been retired. But based on 17 CCR § 95111(a)(4), failure to report RECs with specified renewable imports is treated as a nonconformance that does not affect reported emissions and therefore does not lead to an adverse verification statement.

¹⁴⁴17 CCR § 95802(a).

¹⁴⁵See 17 CCR §§ 95852(b)(3)(D); 95111(a)(4); 95111(g)(1)(M). 17 CCR § 95852(b)(3)(D) formerly read: “If RECs were created for the electricity generated and reported pursuant to MRR, then the RECs must be retired and verified pursuant to MRR.”

¹⁴⁶CPUC, *Decision On Definition And Attributes Of Renewable Energy Credits For Compliance With The California Renewables Portfolio Standard*, D. 08-08-028, App. B (Aug. 21, 2008).

¹⁴⁷CEC, *Renewables Portfolio Standard Eligibility Commission Guidebook* (9th ed.) p. 60, n. 43: “Use of a REC for compliance with the California RPS does not preclude an [Load Serving Entity]’s ability to report a specified import or use the RPS adjustment in accordance with the California Air Resources Board’s [Programs].” The CEC has similar language in the 2015, 8th edition of its Eligibility Guidebook on p. 60 n. 35.

¹⁴⁸See 17 CCR §§ 95852(b)(3)(D); 95111(a)(4); 95111(g)(1)(M).

¹⁴⁹Oregon Dept. of Energy letter seeking stakeholder comments dated Jun. 23, 2017, avail. at <http://www.oregon.gov/energy/energy-oregon/Documents/2017-06-23-Public-Comment-Request-RECS-RPS-and-CA-EIM.pdf>.

¹⁵⁰the comments sent to ODOE are avail. at <http://www.oregon.gov/energy/energy-oregon/Documents/2017-Public-Comments-RECs-EIM.pdf>; http://www.oregon.gov/energy/energy-oregon/Documents/2017_6_PaciCorpREC_Presentation.pdf.

¹⁵¹ <https://www.wecc.biz/Administrative/WREGIS%20EIM%20Task%20Force%2020170810%20Meeting%20Minutes%20FINAL.pdf>.

¹⁵²ODOE, avail. at https://www.westerneim.com/Documents/OregonDOEPresentation-OregonsRPS_RECsAndEIM.pdf; Western Power Trading Forum, avail. at <https://www.westerneim.com/Documents/WPTFPresentation-REC-GHGTreatment-EIM.pdf>; PacifiCorp; avail. at <https://www.westerneim.com/Documents/PaciCorpPresentation-EnergyImportedIntoCaliforniaViaEIM.pdf>; and Center for Resource Solutions (CRS) <https://www.westerneim.com/Documents/CRSPresentation-REC-GHGTreatmentinEIM.pdf>.

¹⁵³avail. at <https://www.wecc.biz/Administrative/WREGIS%20EIM%20Task%20Force%20Comments%20082017%20-%20CEC,%20CARB,%20CPUC.pdf>. Interestingly, the CPUC had

previously discussed, and dismissed, the scenario of a REC going into California without the energy. CPUC, *Decision on Definition and Attributes of Renewable Energy Credits for Compliance with the California Renewables Portfolio Standard*, D. 08-08-028, p. 27, n. 59 (Aug. 21, 2008).

¹⁵⁴avail. at <https://www.wecc.biz/Administrative/WREGIS%20EIM%20Task%20Force%20Comments%20082017%20-%20California%20Energy%20Commission.pdf>.

¹⁵⁵Comments of PacifiCorp, avail. at <https://www.wecc.biz/Administrative/WREGIS%20EIM%20Task%20Force%20Comments%20082017%20-%20PacifiCorp.pdf>; Avangrid Renewables, avail. at <https://www.wecc.biz/Administrative/WREGIS%20EIM%20Task%20Force%20Comments%20082017%20-%20Avangrid%20Renewables.pdf>; and Western Power Trading Forum, avail. at <https://www.wecc.biz/Administrative/WREGIS%20EIM%20Task%20Force%20Comments%20082017%20-%20Western%20Power%20Trading%20Forum.pdf>.

¹⁵⁶ <https://www.wecc.biz/Administrative/WREGIS%20EIM%20Task%20Force%20Comment%20s%20082017%20-%20Center%20for%20Resource%20Solutions.pdf>.

¹⁵⁷See CRS letters to California's Independent Emissions Market Advisory Committee (IEMAC) of Oct. 5, 2018 and Aug. 22, 2019; avail. at <https://resource-solutions.org/wp-content/uploads/2018/10/CRS-Comments-for-IEMAC-10-5-2018.pdf> and <https://resource-solutions.org/wp-content/uploads/2019/12/CRS-Letter-to-IEMAC-8-22-2019.pdf>.

¹⁵⁸See Independent Emissions Market Advisory Committee Annual Report—2019, pp. 16-17, avail. at https://calepa.ca.gov/wp-content/uploads/sites/6/2020/01/Final_2019_IEMAC_Annual_Report_2019_12_06.a.pdf

¹⁵⁹See EIM RIF meeting materials and recordings for meetings on September 7, 2017 and June 18, 2019, avail. at <https://www.westerneim.com/Pages/Governance/RegionalIssuesForum.aspx>.

¹⁶⁰See MWG documents and recordings

avail. at <https://www.utc.wa.gov/docs/Pages/DoctrineLookup.aspx?FilingID=190760>.

¹⁶¹See <https://www.oregon.gov/deq/Regulations/rulemaking/Pages/rcfpe2021.aspx>.

¹⁶²IEMAC Annual Report 2019, pp. 16-17, avail. at https://calepa.ca.gov/wp-content/uploads/sites/6/2020/01/Final_2019_IEMAC_Annual_Report_2019_12_06.a.pdf

¹⁶³ <http://www.energy.ca.gov/pcl/>; comments posted at <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=16-OIR-05>; my comments are at <https://efiling.energy.ca.gov/GetDocument.aspx?tn=230400&DocumentContentId=61960>. Final Power Source Disclosure Regulations at 20 CCR §§ 1391-1394, avail. at <https://efiling.energy.ca.gov/GetDocument.aspx?tn=232986&DocumentContentId=65451>.

¹⁶⁴20 CCR § 1393(b)(1) and 20 CCR § 1393(c)(1)(B).

¹⁶⁵See Final Statement of Reasons (FSOR) for Modification of Regulations Governing the Power Source Disclosure Program Docket No. 16-OIR-05, pp. 23, 24, 32, 41, 42, 45-6, 58, avail. at <https://efiling.energy.ca.gov/GetDocument.aspx?tn=232946-2&DocumentContentId=65394>: “these regulations are consistent, to the extent practicable, with the GHG emissions accounting practices for the electricity sector as performed through CARB’s MRR.”

¹⁶⁶20 CCR § 1393(a)(1).

¹⁶⁷20 CCR § 1393(c)(1).

¹⁶⁸FSOR for Modification of Regulations Governing the Power Source Disclosure Program Docket No. 16-OIR-05, p. 21.

¹⁶⁹EPA, Final Rule, *Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Generating Units*, 40 C.F.R. Part 60, 80 Fed. Reg. at 64662 (Oct. 23, 2015).

¹⁷⁰80 Fed. Reg. at 64908; 80 Fed. Reg. at 64990.

¹⁷¹80 Fed. Reg. at 64850 (“a MWh of electric generation from a wind turbine could be used by an electric distribution utility to comply with state RPS requirements and also be used by an affected [generating unit] to comply with emis-

sion standard requirements under a state plan.”).

¹⁷²80 Fed. Reg. at 64735, col. 2.

¹⁷³80 Fed. Reg. at 64735, col. 2.

¹⁷⁴80 Fed. Reg. at 64896.

¹⁷⁵80 Fed. Reg. at 65092.

¹⁷⁶See, e.g., Gehring & Streck, *Emissions Trading: Lessons from SOx and NOx Emissions Allowance and Credit Systems Legal Nature, Title, Transfer, and Taxation of Emission Allowances and Credits*, 35 Environmental Law Reporter 10219 at 10221-22 (Apr. 2005).

¹⁷⁷80 Fed. Reg. at 64735.

¹⁷⁸80 Fed. Reg. at 64741.

¹⁷⁹80 Fed. Reg. at 64754.

¹⁸⁰80 Fed. Reg. at 64747.

¹⁸¹80 Fed. Reg. at 64806.

¹⁸²e.g., 80 Fed. Reg. at 64908.

¹⁸³80 Fed. Reg. at 64908 (“The interaction of **other instruments** and ERCs may also impact existing or future arrangements in the private marketplace.”).

¹⁸⁴“‘Renewable energy credit’ or ‘REC’ means a contractual right to the full set of non-energy attributes, including any and all credits, benefits, **emissions reductions**, offsets, and allowances, **howsoever entitled**, directly attributable to a specific amount of electric energy generated from a renewable energy resource. One REC results from one MWH of electric energy generated from a renewable energy resource. . . .” Code of Colo. Regs. 723-3 3652(y).

¹⁸⁵80 Fed. Reg. at 64806.

¹⁸⁶80 Fed. Reg. at 64806.

¹⁸⁷80 Fed. Reg. at 64908 (emphasis supplied).

¹⁸⁸Todd Jones, *Renewable Energy in the EPA Clean Power Plan, Part 2: Interactions With and Impacts on RECs and Renewable Energy Markets*. Center for Resource Solutions (October 16, 2015), pp. 2-3, avail. at <https://resource-solutions.org/wp-content/uploads/2015/10/Renewable-Energy-In-the-EPA-CPP-2.pdf>.

¹⁸⁹EPA, *Proposed Rule, Carbon Pollution*

Emissions Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 79 Fed. Reg. 34830 (Jun. 18, 2014).

¹⁹⁰79 Fed. Reg. at 34886 col. 1; 79 Fed. Reg. at 34889.

¹⁹¹79 Fed. Reg. at 34856 col. 1; 79 Fed. Reg. at 34888 col. 2; 79 Fed. Reg. at 34883 col. 2; 79 Fed. Reg. at 34885 col. 1; 79 Fed. Reg. at 34894 col. 2; 79 Fed. Reg. at 34886 col. 1; 79 Fed. Reg. at 34889 col. 1; 79 Fed. Reg. at 34889 col. 2.

¹⁹²79 Fed. Reg. at 34880 col. 2.

¹⁹³80 Fed. Reg. at 65003-04.

¹⁹⁴80 Fed. Reg. at 65011.

¹⁹⁵80 Fed. Reg. at 64908 (“The EPA also notes that non-ERC certificates may be issued by states and other bodies for MWh of energy generation and energy savings that are used to meet other state regulatory requirements, such as state RPS and EERS, or by individuals to make environmental or other claims in voluntary markets.”).

¹⁹⁶See, e.g., Peskoe, Harvard Environmental Policy Initiative, *Emission Rate Credits (ERCS) in the Clean Power Plan: An FAQ for States and Stakeholders*, pp. 5-6 (Oct. 20, 2015).

¹⁹⁷*Trustees of Dartmouth College v. Woodward*, 4 Wheat. 518 (1819).

¹⁹⁸79 Fed. Reg. at 34918 col. 2; 79 Fed. Reg. at 34913 col. 2; 79 Fed. Reg. at 34914 col. 2; 79 Fed. Reg. at 34921 col. 3; 79 Fed. Reg. at 34922 col. 1. See reports posted at <http://resource-solutions.org/press-releases/crs-publishes-guides-to-renewable-energy-in-the-epa-clean-power-plan/>, Renewable Energy in the EPA Clean Power Plan. Part 1: Introduction to Emission Rate Credits (Oct. 16, 2015) and Renewable Energy in the EPA Clean Power Plan. Part 2: Interactions With and Impacts on RECs and Renewable Energy Markets (Oct. 16, 2015).

¹⁹⁹80 Fed. Reg. at 64908.

²⁰⁰77 Fed. Reg. at 62122 (emphasis supplied).

²⁰¹“what is knowledge? Knowledge means expecting a particular event to occur after some other specific events have occurred. One who

does not know anything can expect everything. One who knows something thinks that not everything can occur, but only certain things, while he considers other events impossible. Knowledge is thus a restriction placed on diversity; it is greater

the lesser the uncertainty of the person expecting something to happen is.” Stanislaw Lem, *Summa Technologiae*, p. 169 (Univ. of Minnesota Press 2013 tr. by Joanna Zylinska; orig. Wydawnictwo Literackie, Kraków 1964).

