Abstract: Electricity generation facilities are the single largest source of greenhouse gas emissions in the United States. Although renewable generation facilities offer a cleaner alternative to traditional, carbon-intensive methods of electricity generation, output from renewable facilities is less reliable and more costly relative to facilities that burn fossil fuels. Therefore, in an unfettered marketplace, investment in renewable energy facilities would be slow if not stagnant. In response to concerns regarding anthropogenic climate change and fuel diversity, an increasing number of state governments have implemented statutory and regulatory regimes to incentivize the construction of renewable generation facilities within state or regional borders. These programs run the risk of violating the dormant Commerce Clause because they provide for differential treatment of electricity based, at least in part, upon the commodity’s geographic origin. This Note argues that state programs that condition benefits upon the in-region location of a renewable generation facility or physical delivery of electricity from a facility in a neighboring region can survive scrutiny under the dormant Commerce Clause.

Introduction

A reliable source of electricity is necessary to support innumerable aspects of our everyday lives.\(^1\) Unfortunately, the myriad benefits of readily accessible electricity come with environmental costs.\(^2\) In 2010,
electric generation facilities produced seventy-two percent of reported greenhouse gas emissions in the United States. The EPA estimates that forty percent of the United States's carbon emissions are the product of coal-fired power generation alone.

Growing awareness of the adverse effects of greenhouse gases has prompted federal, state, and local governments to push for an increase in the utilization of renewable or "green" energy sources. Due to the significant cost advantages of generating electricity by burning fossil fuels, growth in renewable energy generation capacity would be slow, if not stagnant, in an unfettered marketplace. In the early 1980s, Iowa became the first state to use a renewable portfolio standard (RPS) to combat the market forces favoring fossil fuel-based generation. The basic premise behind an RPS is to create a separate market where renewable electricity does not directly compete with less costly electricity produced by burning fossil fuels.

Some commentators have addressed concerns that many states might be violating the dormant Commerce Clause when implementing RPSs. Such concerns stem from RPS provisions that provide special incentives for generation within the enacting state or the enacting state’s geographic region. Although federal courts have not yet issued rulings on the constitutionality of RPSs, many commentators believe that it is only a matter of time before an RPS is struck down as unconstitutional. Recent litigation in the Ninth Circuit concerning the consti-

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4 Ferrey et al., *supra* note 3.


8 McCauley et al., *supra* note 5.

9 See infra notes 180–189 and accompanying text.

10 See infra notes 55–60 and accompanying text.

11 See infra notes 177–179 and accompanying text.
tutionality of other environmental statutes might lend credence to the commentators’ speculation.\textsuperscript{12}

This Note discusses the legal viability of RPSs that explicitly favor renewable generation facilities located within a particular geographic region. Part I discusses the mechanics of an RPS and the various geographic preferences that states have built into RPS statutes and regulations.\textsuperscript{13} This discussion is not limited to RPSs that favor in-region renewable energy, but rather covers a variety of RPSs currently in effect. Because alternative courses of action are considered in a dormant Commerce Clause analysis, a basic understanding of various RPS structures is necessary. Part II summarizes the Supreme Court’s dormant Commerce Clause jurisprudence, including the different levels of judicial scrutiny and potential exceptions to the application of the dormant Commerce Clause.\textsuperscript{14} Part III examines recent challenges to RPSs and other litigation related to the dormant Commerce Clause and state-level environmental statutes.\textsuperscript{15} This Note concludes that RPSs explicitly favoring in-region renewable generation facilities are not inconsistent with the dormant Commerce Clause.\textsuperscript{16}

I. THE CONTEXT OF RENEWABLE ENERGY MANDATES

A. RPS Fundamentals

1. RPS Policy and Planning

An RPS is a statutory or regulatory mandate that retail sellers of electricity include a certain amount of renewable energy in their wholesale electricity mix.\textsuperscript{17} Common examples of energy sources that qualify for state RPSs include wind energy, solar photovoltaic energy, geothermal energy, and tidal energy.\textsuperscript{18} An RPS creates a separate market for renewable electricity within a state or region and thereby incentivizes developers to invest in and build renewable energy capacity.\textsuperscript{19}

\textsuperscript{12} See infra notes 156–173 and accompanying text.
\textsuperscript{13} See infra notes 17–83 and accompanying text.
\textsuperscript{14} See infra notes 84–146 and accompanying text.
\textsuperscript{15} See infra notes 147–182 and accompanying text.
\textsuperscript{16} See infra notes 228–274 and accompanying text.
\textsuperscript{17} Fershee, supra note 7, at 77; McCauley et al., supra note 5; Nancy Rader & Scott Hempling, Nat’l Ass’n of Regulatory Util. Comm’rs, The Renewables Portfolio Standard 1–2 (2001).
\textsuperscript{18} Fershee, supra note 7, at 79.
\textsuperscript{19} See McCauley et al., supra note 5. RPSs supplement federal tax credits to promote investment in large-scale renewable energy facilities. See Powers, supra note 5, at 613.
Different RPSs function in a variety of ways.\textsuperscript{20} For example, an RPS can require a retail seller of electricity to procure a specified percentage of its wholesale power from qualifying renewable energy sources.\textsuperscript{21} Alternatively, an RPS can mandate that a retail seller procure, in absolute terms, a certain amount of electricity from renewable generation facilities.\textsuperscript{22} Furthermore, an RPS can focus on the amount of installed renewable energy capacity.\textsuperscript{23}

RPSs have traditionally been promulgated at the state level.\textsuperscript{24} Initially, public utility commissions (PUCs) created and implemented RPSs, but state legislatures have increasingly begun to implement statutory mandates themselves.\textsuperscript{25} As of November 2013, thirty-one states and the District of Columbia have an RPS or an “alternative portfolio standard,” while an additional seven states specify voluntary goals for renewable electricity procurement.\textsuperscript{26} The fundamental policy goal behind an RPS is to increase the proportion of the wholesale electricity mix that is derived from renewable energy sources.\textsuperscript{27}

Due to limitations surrounding the construction of generation and transmission facilities, states and PUCs phase in RPSs gradually.\textsuperscript{28} RPSs have traditionally been promulgated at the state level.\textsuperscript{24} Initially, public utility commissions (PUCs) created and implemented RPSs, but state legislatures have increasingly begun to implement statutory mandates themselves.\textsuperscript{25} As of November 2013, thirty-one states and the District of Columbia have an RPS or an “alternative portfolio standard,” while an additional seven states specify voluntary goals for renewable electricity procurement.\textsuperscript{26} The fundamental policy goal behind an RPS is to increase the proportion of the wholesale electricity mix that is derived from renewable energy sources.\textsuperscript{27}

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\item \textsuperscript{20} Ryan Wiser et al., Ernest Orlando Lawrence Berkeley Nat’l Lab., Renewables Portfolio Standards: A Factual Introduction to Experience from the United States 4 (2007).
\item \textsuperscript{21} Id.
\item \textsuperscript{22} Id.
\item \textsuperscript{24} Ryan Wiser et al., supra note 20, at 1.
\item \textsuperscript{27} Most States Have Renewable Portfolio Standards, supra note 26. Other policy goals of RPSs include reducing carbon emissions, stimulating local economic activity, promoting diversity in generation, and increasing energy security. David Hurlbut, Nat’l Renewable Energy Lab., State Clean Energy Practices: Renewable Portfolio Standards 2 (2008).
\item \textsuperscript{28} See Michael Dworkin et al., The Law of Clean Energy 531–32 (Michael B. Ger- rard ed., 2011) (discussing hardships of delivering renewable energy to locations where demand exists); Fershee, supra note 7, at 77; James W. Moeller, Interstate Electric Transmission Lines and States’ Rights in the Mid-Atlantic Region, 40 B.C. Envtl. Aff. L. Rev. 77, 78.
\end{itemize}
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implementing states typically structure their programs around a long-term goal that is incrementally increased according to a predetermined compliance schedule.\textsuperscript{29} For example, Massachusetts’s RPS requires retail sellers of electricity to source 15% of their electricity from Class I renewable energy sources by the year 2020, with an annual 1% increase thereafter.\textsuperscript{30} In the interim, the RPS sets out annual benchmarks to be met along the way.\textsuperscript{31}

2. RPS Design and Renewable Energy Certificates

A state legislature or PUC responsible for establishing an RPS has complete autonomy over its design.\textsuperscript{32} RPSs commonly feature a provision that specifies how much electricity a retail seller must purchase from renewable sources of energy, and some states take a more aggressive approach than others.\textsuperscript{33} California, for example, has established a goal of 33% of retail sales by 2020,\textsuperscript{34} whereas Arizona’s RPS requires just 15% of retail sales after 2024.\textsuperscript{35}

Furthermore, the legislature or PUC must decide what energy sources qualify as “renewable” under the RPS.\textsuperscript{36} The types of generation facilities that qualify under different RPSs vary widely by state.\textsuperscript{37} Most
RPSs consider sources such as wind, solar, geothermal, and tidal energy as renewable, but there is no consensus on the eligibility of sources such as biomass and municipal solid waste incineration.\textsuperscript{38}

A state’s autonomy over its RPS extends to establishing which entities must comply with its provisions.\textsuperscript{39} A state can choose to have its RPS apply to all retail electricity sellers in the state or, like Minnesota, create specific provisions that in effect apply to one utility only.\textsuperscript{40} States often exempt entities such as municipalities and rural electric cooperatives from RPS requirements.\textsuperscript{41}

States must also devise a method for regulated entities to demonstrate compliance with an RPS.\textsuperscript{42} Unless a utility also owns a renewable generation facility, the utility generally complies with an RPS’s mandates through the purchase of renewable energy credits (REC), which have become the “currency” of renewable electricity markets.\textsuperscript{43} Generally, one REC represents the environmental attributes associated with the generation of one megawatt-hour of electricity.\textsuperscript{44} In an RPS that uses RECs, renewable power plants theoretically have two outputs that can be sold together or separately.\textsuperscript{45} The first output is the electricity

\textsuperscript{38} Wiser et al., supra note 20, at 5. Pennsylvania’s alternative energy standard illustrates how broadly some states define the term “renewable.” See 73 Pa. Cons. Stat. Ann. § 1648.2 (West 2008). In Pennsylvania, the combustion of waste coal is considered renewable in some circumstances. See id. The enacting body may tailor the RPS to the characteristics of the enacting state. Most States Have Renewable Portfolio Standards, supra note 26. For example, a state with an abundant supply of commercial-grade wind energy will be inclined to incentivize the construction of wind farms to attract investment in renewable energy. See id.

\textsuperscript{39} See Fershee, supra note 7, at 78.

\textsuperscript{40} Alexandra B. Klass, Interstate Transmission Challenges for Renewable Energy: A Federalism Mismatch, 65 Vand. L. Rev. 1801, 1832 n.157 (2012); compare 225 Mass. Code Regs. 14.04 (applying to all Massachusetts electricity retailers), with Minn. Stat. § 216B.1691 subdiv. 2a(b) (2010) (containing provisions that in effect only apply to only one utility).

\textsuperscript{41} See Fershee, supra note 7, at 78.

\textsuperscript{42} Wiser et al., supra note 20, at 3.

\textsuperscript{43} Fershee, supra note 7, at 79; Envtl. Prot. Agency, Renewable Energy Certificates 1 (2008), available at http://www.epa.gov/greenpower/documents/gpp_basics-recs.pdf and http://perma.cc/0Sw8jY5mb81. Because most states require regulated parties to demonstrate compliance with an RPS through the use of RECs, this Note assumes that an RPS uses REC trading unless explicitly stated otherwise. See Powers, supra note 5, at 611.

\textsuperscript{44} Michael Zimmer et al., RECs Get Real, 145 No. 11 Pub. Util. Fort. 25, 25 (2007).

\textsuperscript{45} Fershee, supra note 7, at 79. Absent a direct connection between generator and end-user, it is impossible to trace electrons in interstate commerce. See New York v. Fed. Energy Regulatory Comm’n, 535 U.S. 1, 7 n.5 (2002) (“[E]lectricity flowing onto a power network or grid energizes the entire grid, and consumers then draw undifferentiated energy from that grid.”). Therefore, electricity does not necessarily follow its contract path from seller to purchaser. See Steven Ferrey, Follow the Money! Article I and Article VI Constitutional Barriers to Renewable Energy in the U.S. Future, 17 Va. J.L. & Tech. 89, 105 (2012).
that the facility generates.\textsuperscript{46} The second output is a bundling of the electricity’s environmental attributes into a tradable financial instrument.\textsuperscript{47} These financial instruments are RECs.\textsuperscript{48}

RECs are common features of RPS programs for two reasons.\textsuperscript{49} First, RECs increase flexibility in compliance with the mandates promulgated by an RPS.\textsuperscript{50} RECs increase flexibility because utilities do not have to construct their own renewable generation facilities to meet their renewable energy obligations.\textsuperscript{51} In addition to being self-generated, RECs may be purchased in an REC trading market.\textsuperscript{52} Second, RECs help reduce the financial burdens of implementing an RPS.\textsuperscript{53} A purchaser of RECs acquires the rights to the environmental attributes of renewable electricity but does not necessarily take physical delivery of the electricity itself.\textsuperscript{54} This arrangement allows for the avoidance of costs associated with the transmission and distribution of electricity across long distances, but does not assure a geographic nexus between the retail customer and some of the location-specific benefits of renewable energy.\textsuperscript{55}

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\item[{46}] Fershee, supra note 7, at 79.
\item[{47}] McCauley et al., supra note 5, at 188. The environmental attributes usually represent the carbon-dioxide, sulfur-oxide, and nitrogen-oxide emissions profile of the electricity. Id. If the emissions profile meets the criteria set forth by the state RPS, a REC is produced along with the renewable electricity. Id.
\item[{48}] See id.
\item[{49}] Wiser et al., supra note 20, at 3–4.
\item[{50}] Id.
\item[{51}] Id.
\item[{52}] Id.
\item[{53}] Id. Per unit of output, renewable energy is more expensive than energy produced by burning fossil fuels. Stiles, supra note 6, at 43–44.
\item[{55}] See Int’l Electrotechnical Comm’n, Efficient Electrical Energy Transmission and Distribution 2 (2007). Electricity is lost in transmission due to resistance in transmission lines and conversion of the power from high to low voltages. Id. at 2, 7–8. The resistance in a transmission line represents friction and results in energy being lost as heat. Lana Wong, A Review of Transmission Losses in Planning Studies 8 (2011). The resistance within a transmission line increases as the line’s length increases, and therefore, losses are greater in longer transmission lines. Id. A California researcher stated “[i]n wetter years, California hydropower generation may account for a larger source of generation while out-of-state generation and other in-state fossil units may account for less, so losses would be generally lower in wetter years.” Id. at 13–14. A seven-year study found a negative correlation between in-state hydroelectric generation and transmission losses. Id.
\end{enumerate}
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B. Examples of Geographic Preferences in State RPSs and Renewable Energy Certificate Tracking Systems

A driving interest behind state-level RPSs is exacting local benefits from the construction of renewable generation facilities. States want to retain the economic benefits of jobs and tax revenues, the environmental benefits of displacing fossil fuel-intensive electricity generation, and the price-stability benefits of diversifying the energy portfolio of retail electricity suppliers. Consequently, states sometimes use their autonomy over RPS design to categorically exclude out-of-state or out-of-region generation as ineligible, or to otherwise provide benefits to local renewable energy development.

One commentator identified five main categories in which to organize existing geographic preferences in state RPS programs. The first category of geographic preferences involves a state awarding extra RECs based on the location of a renewable generation facility. The second category provides an explicit preference for in-state renewable generation. The third category involves limiting eligibility based on in-region, rather than in-state location of the renewable energy resource. The fourth category of geographic preferences involves defining an eligible resource as a generation facility that is located in a certain state or region. The fifth category involves providing extra

56 Hurlbut, supra note 27.
57 Id. If added to the wholesale electricity mix, renewable power sources would likely be the first power sources dispatched by the system operator to meet market demand. Steven Ferrey, Restructuring a Green Grid: Legal Challenges to Accommodate New Renewable Energy Infrastructure, 39 Envt'l. L. 977, 987–88 (2009). Despite the capital intensity of constructing a renewable generation facility, renewable fuel sources such as wind and solar energy are free. Id. Therefore, there is virtually no marginal cost associated with an additional unit of output from a renewable generator. Id. In New England, the systems operator dispatches generation units beginning with the lowest cost producer, meaning many renewable energy resources are the first to be dispatched. ISO New England Inc., The Benefits of Uniform Clearing Price Auctions for Pricing Electricity: Why Pay-as-Bid Auctions Do Not Cost Less 1 (2006), available at http://www.iso-ne.com/pubs/whtpprs/uniform_clearing_price_auctions.pdf and http://perma.cc/0PdR5ZMHhfk.
59 Id.
60 Id.
61 Id.
62 Id.
63 Id.
64 Id.
65 Id.
incentives and REC credits for renewable facilities that are built with in-state labor and component parts.\footnote{Ferrey, supra note 58, at 72.}

1. Massachusetts and the New England Power Pool: In-State Location and In-Region Deliverability Requirements


Massachusetts’s RPS also mandates that a portion of the RPS obligations are satisfied by solar energy technologies.\footnote{Id.} The statute establishing Massachusetts’s RPS mandates the Department of Public Utili-

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\footnote{225 Mass. Code Regs. 14.05(4)(a).}
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ties (DPU) to require that each retail supplier of electricity procure a certain percentage of its sales from specific technologies or fuels. The DPU has discretion over what specific types of renewable technologies satisfy the RPS requirements as well as the amount of renewable electricity to be procured. The Massachusetts DPU created a “Solar Carve-Out” that requires a specified percentage of electricity each year to come from in-state solar facilities.

2. Arizona: Location-Based REC Multipliers and Preferences for In-State Component Parts

Arizona’s RPS incentivizes the construction of in-state renewable generation facilities through the use of extra credit multipliers. The Arizona Administrative Code defines extra credit multipliers as “a way to increase the Renewable Energy Credits attributable to specific Eligible Renewable Energy Resources in order to encourage specific renewable applications.” One of the available multipliers is neutral regarding the origin of the electricity and simply provides a multiplier ranging from 10% to 30% for the “early installation” of renewable energy capacity. Arizona also offers multipliers that favor in-state renewable generation, including a 50% multiplier for in-state solar generation and a 50% multiplier for various types of in-state renewable energy generation that also use component parts manufactured in Arizona.

3. Ohio: Explicit Preference for In-State Renewable Energy

The statute and regulations that implement Ohio’s RPS also contain provisions that incentivize in-state renewable energy generation. Rather than providing incentives by offering an REC multiplier, Ohio

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74 Id. § R14–2–1801(I) (emphasis added).

75 Id. § R14–2–1806(C). To be eligible for this credit multiplier, the qualifying facility had to be installed and placed into service between January 1, 2001, and December 31, 2003. Id.


77 Ohio Rev. Code Ann. § 4928.64(B)(3) (West 2010).
imposes an affirmative duty on retail sellers of electricity to meet half of the RPS requirements through generation facilities located in-state.\textsuperscript{78} Moreover, Ohio recently enacted legislation that expands RPS eligibility to include “[a]ny new, retrofitted, refueled, or repowered generating facility located in Ohio, including a . . . natural gas generating facility or a generating facility that uses biomass, coal, modular nuclear, or any other fuel as its input.”\textsuperscript{79} Therefore, Ohio’s RPS is really not limited to renewable energy sources, but includes non-renewable energy as long as the generation occurs in-state.\textsuperscript{80}

4. New Jersey: Defining Eligibility Based on Location

New Jersey’s RPS provides that, to be awarded RECs, a renewable generation facility must be located within, or deliver electricity to, the PJM-ISO region.\textsuperscript{81} For a generation facility outside the region to create RECs under New Jersey’s RPS, the facility’s electricity must be under contract for delivery into the PJM region pursuant to the PJM operating agreement.\textsuperscript{82} Out-of-region facilities that are eligible for delivery into the region are further limited to facilities that commenced construction after January 1, 2003.\textsuperscript{83}

II. THE DORMANT COMMERCE CLAUSE

A. Dormant Commerce Clause: Background

Notwithstanding the purported benefits of state renewable portfolio standard (RPS) initiatives, commentators have speculated that many RPSs are likely unconstitutional under the dormant Commerce Clause of the Constitution.\textsuperscript{84} The Constitution’s Commerce Clause grants Congress the power “[t]o regulate Commerce . . . among the several

\textsuperscript{78} Id.

\textsuperscript{79} 2012 Ohio Legis. Serv. Ann. 125 (West).

\textsuperscript{80} Id.

\textsuperscript{81} N.J. ADMIN. CODE § 14:8–2.7(b) (2013). PJM Interconnection, LLC is a regional transmission organization that operates the transmission facilities serving Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia, and the District of Columbia. Moeller, supra note 28, at 81.

\textsuperscript{82} N.J. ADMIN. CODE § 14:8–2.7(b).

\textsuperscript{83} Id. § 14:8–2.7(c).

\textsuperscript{84} Stiles, supra note 6, at 64; Nathan E. Endrud, Note, State Renewable Portfolio Standards: Their Continued Validity and Relevance in Light of the Dormant Commerce Clause, the Supremacy Clause, and Possible Federal Legislation, 45 HARV. J. ON LEGIS. 259, 270 (2008).
States . . ."85 The implications of the Commerce Clause are not limited to its affirmative grant of power to Congress.86 Rather, the Commerce Clause’s affirmative grant of power to Congress impliedly places a limitation on the ability of states and municipalities to enact laws affecting interstate commerce.87 This principle is known as the dormant Commerce Clause.88 Using the dormant Commerce Clause, a court can invalidate a state or local law, even in the absence of congressional action and Supremacy Clause issues.89

If a state law is struck down as unconstitutional under the dormant Commerce Clause, Congress can essentially overrule the judiciary by passing legislation expressly validating the state law.90 Congress, however, is limited by the Commerce Clause in its ability to approve state laws regulating commerce.91 Moreover, congressional approval of a state law does not exempt the law from scrutiny under other provisions of the Constitution such as the Equal Protection or Privileges and Immunities clauses.92

B. Dormant Commerce Clause: Jurisprudence

At the outset, a dormant Commerce Clause analysis of a state law affecting commerce is bifurcated.93 Two predominant categories of state laws subject to judicial scrutiny under the dormant Commerce Clause exist.94 The first category includes laws affecting commerce that operate to discriminate against out-of-state economic interests through “differential treatment of in-state and out-of-state economic interests that benefits the former and burdens the latter.”95 Discriminatory laws can be either facially discriminatory or discriminatory in practical ef-

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85 U.S. Const. art. I, § 8, cl. 3.
86 See C & A Carbone, Inc. v. Town of Clarkstown, 511 U.S. 383, 390 (1994) (“The central rationale for the rule against discrimination is to prohibit state or municipal laws whose object is local economic protectionism, laws that would excite those jealousies and retaliatory measures the Constitution was designed to prevent.”).
87 See id.
88 ERWIN CHERMERINSKY, CONSTITUTIONAL LAW 401 (2d ed. 2002).
89 Id.
90 W. & S. Life Ins. Co. v. State Bd. of Equalization, 451 U.S. 648, 652–53 (1981) (“If Congress ordains that the States may freely regulate an aspect of interstate commerce, any action taken by a State within the scope of the congressional authorization is rendered invulnerable to Commerce Clause challenge.”).
91 See U.S. Const. art. I, § 8, cl. 3.
92 CHERMERINSKY, supra note 88, at 429.
94 Id.
95 Id.
When challenged, these state laws are subjected to “strict scrutiny,” and are virtually per se unconstitutional unless the state defending the law can demonstrate both a legitimate local purpose and that the same purpose could not be served through less discriminatory means. State laws subjected to the Court’s strict scrutiny test rarely pass constitutional muster.

Alternatively, some state laws affecting commerce are nondiscriminatory and have only an incidental effect on interstate commerce. These laws will be subjected to a less rigorous balancing test. For a non-discriminatory state law affecting commerce to be upheld as constitutional, a state must only demonstrate that the putative local benefits of the law outweigh the costs of the law’s burden on interstate commerce. The difference in the Court’s treatment of discriminatory and non-discriminatory laws makes the distinction critical.

1. Analysis of Discriminatory Laws

Assuming a state law is at issue, and that law affects commerce in some manner, the first critical inquiry is determining whether the state law is a discriminatory or protectionist measure. If the state law is essentially a discriminatory and protectionist measure, the court will apply the strict scrutiny test. Under this test, a state law will be held unconstitutional unless the state can demonstrate “that it advances a legitimate local purpose that cannot be adequately served by reasonable nondiscriminatory alternatives.” The burden of proof under strict scrutiny lies with the state or municipality defending the law in question. The burden on the state seeking to defend its law is heavy, and the Supreme Court has commented “facial discrimination by itself...”

96 Wyoming v. Oklahoma, 502 U.S. 437, 456 (1992) (finding that an Oklahoma statute discriminated on its face and in practical effect); Dean Milk Co. v. City of Madison, 340 U.S. 349, 354 (1951) (“[T]his regulation . . . in practical effect excludes from distribution in Madison wholesome milk produced and pasteurized in Illinois.”) (emphasis added).
101 Pike, 397 U.S. at 142.
102 See infra notes 99–125 and accompanying text.
103 Or. Waste Sys., 511 U.S. at 99.
104 Id. at 101.
105 New Energy Co., 486 U.S. at 278.
may be a fatal defect.”

Indeed, the Court refers to laws enacted for economic protectionism as virtually per se invalid.

In City of Philadelphia v. New Jersey, a New Jersey law facially prohibited the importation of waste originating from outside the state. The Supreme Court in 1978 determined that the state law isolated New Jersey from the problem of waste accommodation by erecting barriers to trade. The law placed a burden on out-of-state interests by explicitly disallowing the importation of waste from beyond state borders. The Court, in striking down the law, found that the contested law fell “squarely within the area that the Commerce Clause puts off limits to state regulation.”

In Dean Milk Co. v. City of Madison, the Court in 1951 held that a local regulation on the sale of milk violated the dormant Commerce Clause. In contrast to City of Philadelphia, the local regulation in this case did not facially discriminate against out-of-state interests, but rather discriminated in practical effect. The challenged ordinance prohibited the sale of milk that had not been processed and bottled at an approved plant within a five-mile radius of the city’s center. Notwithstanding the local government’s prerogative to provide for the health and safety of its citizens, the Court reasoned that because reasonable and adequate alternatives were available, the ordinance violated the dormant Commerce Clause.

In West Lynn Creamery v. Healy, the Supreme Court in 1994 struck down a Massachusetts pricing order that imposed a tax on all milk sold

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108 City of Phila., 437 U.S. at 624.
109 Id. at 628.
110 Id. (“What is crucial is the attempt by one State to isolate itself from a problem common to many by erecting a barrier against the movement of interstate trade.”).
111 See id. at 618.
112 Id. at 628.
113 340 U.S. at 354.
114 Id.
115 Id. at 350–51.
116 Id. at 354 (“In thus erecting an economic barrier protecting a major local industry . . . , Madison plainly discriminates against interstate commerce. This it cannot do, even in the exercise of its unquestioned power to protect the health and safety of its people, if reasonable nondiscriminatory alternatives . . . are available.”) (emphasis added). Scholars have interpreted Dean Milk to mean that when a state or local government regulates for the welfare and health of its people, the government “only has to use the means with the least burden on commerce if the party challenging the state or local law can demonstrate that the state or local government could achieve exactly equal benefits through a law that would not place a great burden on commerce.” JOHN E. NOWAK & RONALD D. ROTUNDA, CONSTITUTIONAL LAW 370 (8th ed. 2010) (emphasis added).
by dealers to Massachusetts retailers.\textsuperscript{117} In conjunction with the pricing order, Massachusetts distributed all proceeds of the assessment to in-state dairy farmers.\textsuperscript{118} The Supreme Court analogized the combination of taxation and subsidies to an impermissible protective tariff or customs duty.\textsuperscript{119} Eschewing formalism in favor of case-by-case analysis, the Court invoked language from a 1940 opinion stating, “[t]he commerce clause forbids discrimination, whether forthright or ingenious. In each case it is our duty to determine whether the statute under attack . . . will in its practical operation work discrimination against interstate commerce.”\textsuperscript{120}

2. Analysis of Non-Discriminatory Laws

Where a state law is not patently discriminatory with regard to interstate trade, the law is subject to less rigorous judicial scrutiny.\textsuperscript{121} A state law that regulates even-handedly and imposes only incidental burdens on interstate commerce will generally be upheld unless the burden is clearly excessive in relation to local benefits.\textsuperscript{122} Where a law does in fact produce bona fide local benefits, the court weighs the benefits against the law’s corresponding burdens on commerce.\textsuperscript{123} Moreover, a court will be more inclined to uphold a law as constitutional if the benefits of the law could not be brought about through less restrictive means.\textsuperscript{124} This analytical approach, outlined by the Court in \textit{Pike v. Bruce Church, Inc.}, is known as the \textit{Pike} balancing test.\textsuperscript{125}

Importantly, where a state law regulates even-handedly rather than in a discriminatory manner, the government defending its law will have

\textsuperscript{117} 512 U.S. at 188. Out-of-state dairy farmers sold approximately two-thirds of the milk subject to the assessment. \textit{Id.}

\textsuperscript{118} \textit{Id.}

\textsuperscript{119} \textit{Id.} at 193–94. The Court stated that a tariff or customs duty is the “paradigmatic example” of a law discriminating against interstate commerce. \textit{Id.} at 193. According to the Court, tariffs and customs duties violate the principle of a unitary national market by neutralizing the competitive advantage of out-of-state competitors and artificially encouraging in-state production. \textit{See id.}

\textsuperscript{120} \textit{Id.} at 201 (quoting Best & Co. v. Maxwell, 311 U.S. 454, 455–56 (1940)).

\textsuperscript{121} \textit{Compare Pike}, 437 U.S. at 142 (outlining the Court’s balancing test), \textit{with Dean Milk}, 340 U.S. at 354 (outlining the requirements of the Court’s strict scrutiny test).

\textsuperscript{122} \textit{Pike}, 437 U.S. at 142.

\textsuperscript{123} \textit{Id.}

\textsuperscript{124} \textit{Id.}

two distinct advantages. First, the burden of proof will be on those challenging the law as unconstitutional. Second, there is a presumption of validity in that a state law will be upheld absent a showing that the law places a clearly excessive burden on interstate commerce relative to the local benefits. A state will not be required to use the least restrictive means available to further its goal unless those challenging the law can demonstrate that less discriminatory measures can achieve the goal with equal efficacy.

3. The Dormant Commerce Clause in the Energy and Environmental Context

In Wyoming v. Oklahoma, the Supreme Court in 1992 struck down an Oklahoma statute requiring in-state, coal-fired generation plants to use at least ten percent Oklahoma-mined coal. Applying strict scrutiny, the Court held that Oklahoma failed to demonstrate that the statute furthered a legitimate local interest that could not be adequately served by non-discriminatory alternatives. Reasoning that prior Court decisions foreclosed a justification based on protecting local industry against interstate competition, the Court found that the statute violated the dormant Commerce Clause.

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126 Nowak & Rotunda, supra note 116, at 341.
127 Id.
128 See id.
129 See id.
130 502 U.S. at 444, 458–59. Prior to enacting the legislation at issue in Wyoming v. Oklahoma, the Oklahoma legislature adopted a concurrent resolution “requesting Oklahoma utility companies using coal-fired generating plants to consider plans to blend ten percent Oklahoma coal with their present use of Wyoming coal; effecting a result of keeping a portion of ratepayer dollars in Oklahoma and promoting economic development.” Id. at 443.
131 Id. at 456.
132 Id. at 456–57. The concurrent resolution adopted by the Oklahoma legislature prior to enacting the law at issue in this case may have imbued the Court with a sense that the law was an impermissible attempt to achieve a presumably legitimate goal by “the illegitimate means of isolating the State from the national economy.” See id. (quoting City of Phila., 437 U.S. at 627). Where a state law facially discriminates against interstate commerce, the law must be justified by a factor unrelated to economic protectionism. See Wyoming, 502 U.S. at 454; Maine v. Taylor, 477 U.S. 131, 148 (1986); Nowak & Rotunda, supra note 116, at 338 (“[T]he economic enrichment of the local persons will not constitute a significant or important interest. Indeed, enrichment of local persons through the use of a discriminatory trade barrier should not be deemed a legitimate state goal.”); see also New Energy Co., 486 U.S. at 279–80 (ruling unconstitutional an Ohio statute giving favorable tax treatment to ethanol produced in-state or in a state with a reciprocity agreement).
Maine v. Taylor, decided in 1986, is a rare example of the Court upholding a state statute notwithstanding the application of strict scrutiny. The Maine statute at issue in this case prohibited the importation of all live baitfish. Maine defended the statute by asserting that the importation ban protected the state’s fisheries from parasites and non-native species. In finding that no available non-discriminatory means existed, the Court stated that “[a] State must make reasonable efforts to avoid restraining the free flow of commerce across its borders, but it is not required to develop new and unproven means of protection at an uncertain cost.” The Court stated that “abstract possibilities” of alternative, non-discriminatory methods of protecting Maine’s fisheries do not constitute available alternatives. Responding to the argument that fish can swim directly into Maine’s waters, thereby undermining the preservation of Maine’s fisheries, the Court held that impediments to complete success are not enough to prevent the state from legislating to protect its environment.

4. The Market Participant Doctrine

The market participant doctrine allows states to discriminate against out-of-state interests in the provision of benefits from government programs. Under the market participant doctrine, a state may

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133 477 U.S. at 148–51; see supra notes 99–116 and accompanying text.
135 Taylor, 477 U.S. at 133. The U.S. District Court for the District of Maine found that this was a legitimate local purpose, and the U.S. Court of Appeals for the First Circuit, in overturning the district court, did not expressly overrule that determination. Id. at 143. The First Circuit did note several factors that “cast doubt” on the purported legitimate local purpose, including (1) no other state banned the importation of live baitfish, (2) Maine allowed the importation of other freshwater fish subject to an inspection, (3) “an aura of economic protectionism” in statements made by the Maine Department of Inland Fisheries and Wildlife, and (4) doubts concerning the statute’s efficacy. Id. at 143–44 (quoting United States v. Taylor, 752 F.2d 757, 761–62 (1st Cir. 1985)). The Supreme Court noted that “[s]hielding in-state industries from out-of-state competition is almost never a legitimate local purpose.” Id. at 148 (emphasis added). As evidenced by the decision to uphold Maine’s statute, the Court found that Maine’s proffered justifications were legitimate. See id. at 148.
136 Id. at 147.
137 Id.
138 Id. at 151.
provide subsidies to businesses and industries domiciled within the state without running afoul of the dormant Commerce Clause. For the doctrine’s exception to be applicable, the state cannot be acting in a regulatory role; it must be participating in the market through the expenditure of state funds.

Hughes v. Alexandria Scrap Corp., decided in 1976, is regarded as the seminal case in market participant doctrine jurisprudence. In Hughes, the State of Maryland instituted a bounty system to incentivize the collection and disposal of abandoned cars. The law establishing the bounty system placed an increased burden on out-of-state scrap processors in obtaining documentation to demonstrate the property rights required to process the automobile. The increased burden on out-of-state scrap processors operated to channel the benefits of the bounty program to in-state processors. The Court held the Maryland law constitutional because “[n]othing in the purposes animating the Commerce Clause prohibits a State, in the absence of congressional action, from participating in the market and exercising the right to favor its own citizens over others.”

III. CONTEMPORARY DORMANT COMMERCE CLAUSE CHALLENGES TO STATE RENEWABLE PORTFOLIO STANDARDS

A. Massachusetts Avoids Constitutional Scrutiny Through Settlement

Several varieties of geographic preferences in state renewable portfolio standards (RPS) exist. Geographic preferences in state-level RPSs exist in the form of mandates for in-state renewable electricity generation, in-state sales of renewable electricity, in-state consumption of renewable electricity, and mandates for in-state delivery of the bene-

140 Hughes, 426 U.S. at 810; Chemerinsky, supra note 88, at 432; Nowak & Rotunda, supra note 116, at 347.
141 New Energy Co., 486 U.S. at 277 (“That doctrine differentiates between a State’s acting in its distinctive governmental capacity, and a State’s acting in the more general capacity of a market participant; only the former is subject to the limitations of the [dormant] Commerce Clause.”); Nowak & Rotunda, supra note 116, at 346.
142 See generally 426 U.S. 794 (discussing Maryland as a market participant).
143 Id. at 797.
144 Id. at 800.
145 Id. at 794.
146 Id. at 810.
147 See supra notes 52–79 and accompanying text.
fits associated with renewable energy facilities. Notwithstanding the various forms of geographic preferences, as of January 2014, no RPS has been held unconstitutional under the dormant commerce clause.

In April 2010, a Canadian energy company filed a complaint challenging two provisions of Massachusetts’s RPS. TransCanada, owner of a commercial wind farm in Maine, filed the complaint in the U.S. District Court for the District of Massachusetts. The first provision that TransCanada challenged required retail sellers of electricity to solicit long-term power purchase agreements from renewable generation facilities within Massachusetts. In June 2010, the Massachusetts Department of Public Utilities (DPU) issued an emergency regulation repealing the in-state component of the challenged provision. Subsequently, the Massachusetts DPU issued a second emergency order that allowed out-of-state renewable energy producers to submit bids for long-term purchase agreements. TransCanada’s second challenge related to the Massachusetts “Solar Carve-Out,” a requirement that a certain percentage of retail electricity come from in-state solar sources. Rather than amending the RPS to cure the alleged defect,


150 Fershee, supra note 7, at 83.


152 Id.
153 Id.
154 Id.
155 Id.
Massachusetts entered into a settlement agreement with TransCanada, which allowed Massachusetts to avoid amending the RPS.\textsuperscript{156}

\section*{B. The California Low Carbon Fuel Standards}

In October 2012, the U.S. Court of Appeals for the Ninth Circuit heard an appeal from a district court decision regarding the constitutionality of California’s low carbon fuel standards (LCFS).\textsuperscript{157} The LCFS regulate transportation fuels that are “sold, supplied, or offered for sale in California . . . .”\textsuperscript{158} Each of these fuels has a different a carbon intensity score.\textsuperscript{159} This score corresponds to the life cycle emissions of the fuel, including emissions related to natural resource extraction, the refining process, and the fuel’s transportation to California.\textsuperscript{160}

The plaintiffs in the district court advanced three primary Commerce Clause arguments.\textsuperscript{161} First, the plaintiffs claimed that the LCFS impermissibly discriminated against out-of-state corn ethanol.\textsuperscript{162} The plaintiffs asserted that the standards were facially discriminatory in that, all else being equal, corn ethanol from California will automatically have a lower carbon intensity score than corn ethanol from the Midwest because of the distance the latter corn ethanol must travel before it reaches California.\textsuperscript{163} Second, the plaintiffs argued that the LCFS impermissibly regulated commerce and the channels of interstate commerce.\textsuperscript{164} Lastly, the plaintiffs argued that the standards imposed excessive burdens on interstate commerce without producing local benefits.\textsuperscript{165}

The U.S. District Court for the Eastern District of California held that the standards impermissibly discriminated against out-of-state corn ethanol and regulated extraterritorially in violation of the dormant Commerce Clause.\textsuperscript{166} Furthermore, the court held that the plaintiffs

\textsuperscript{156} See id.
\textsuperscript{158} CAL. CODE REGS. tit. 17, § 95480.1(a) (2013); Rocky Mountain Farmers Union v. Goldstene, 843 F. Supp. 2d 1071, 1080 (E.D. Cal. 2011).
\textsuperscript{159} CAL. CODE REGS. tit. 17, § 95481(a)(16).
\textsuperscript{160} Rocky Mountain Farmers Union, 843 F. Supp. 2d at 1080.
\textsuperscript{161} Id. at 1078.
\textsuperscript{162} Id.
\textsuperscript{163} Id. at 1086.
\textsuperscript{164} Id. at 1078.
\textsuperscript{165} Id.
\textsuperscript{166} Rocky Mountain Farmers Union, 843 F. Supp. 2d at 1094.
demonstrated both a likelihood of success on the merits for their Commerce Clause claim and likelihood of irreparable harm, and therefore the court granted a preliminary injunction against the enforcement of the LCFS.\textsuperscript{167}

The court, relying in part on a table attached to the LCFS that explicitly assigned Midwestern corn ethanol higher carbon intensity scores based solely on location, found that the law was facially discriminatory.\textsuperscript{168} Holding production and input emissions equal, Midwestern corn ethanol inherently has a higher score due to the distance it must travel to California.\textsuperscript{169} As a result, the court applied the strict scrutiny test of virtual \textit{per se} invalidity.\textsuperscript{170} Applying the two-part test for discriminatory statutes, the court held that the LCFS violated the dormant Commerce Clause.\textsuperscript{171} Although the court held that the LCFS serve a legitimate local purpose in reducing greenhouse gas emissions, the California Air Resources Board failed to demonstrate that the purpose could not be served through less discriminatory alternatives.\textsuperscript{172}

In October 2013, the Ninth Circuit reversed and held that the LCFS did not facially discriminate against interstate commerce.\textsuperscript{173} The Ninth Circuit reasoned that “to the extent location affects the actual [greenhouse gas] emissions attributable to a default pathway,” the use of location in determining a fuel’s carbon intensity is not discriminatory.\textsuperscript{174} Furthermore, the Ninth Circuit held that the use of regional categories, including explicit reference to California’s geopolitical borders, did not constitute facial discrimination because ethanol from every regional category is effectively treated the same under the regulations.\textsuperscript{175} In holding that the LCFS are not facially discriminatory, the Ninth Circuit remanded for a determination of whether the LCFS discriminated in purpose or practical effect.\textsuperscript{176} The Ninth Circuit instructed that if the district court were to make such a finding, strict scrutiny would once again be the appropriate standard for review, but if the district court

\begin{footnotesize}
  \textsuperscript{167} Id. at 1105.
  \textsuperscript{168} Id. at 1087.
  \textsuperscript{169} Id. at 1087.
  \textsuperscript{170} Id. at 1089; see City of Phila. v. New Jersey, 437 U.S. 617, 624 (1978).
  \textsuperscript{171} Rocky Mountain Farmers Union, 843 F. Supp. 2d at 1093–94.
  \textsuperscript{172} Id.
  \textsuperscript{173} Rocky Mountain Farmers Union v. Corey, 730 F.3d 1070, 1079, 1097 (9th Cir. 2013).
  \textsuperscript{174} Id. at 1089–90.
  \textsuperscript{175} Id. at 1090, 1093.
  \textsuperscript{176} Id. at 1107.
\end{footnotesize}
did not make such a finding, the balancing test from Pike v. Bruce Church, Inc. would apply.\footnote{177}

C. Litigation in the Mid-Atlantic

In PPL Energyplus v. Nazarian, the U.S. District Court for the District of Maryland in 2013 held that a Maryland Public Service Commission ("PSC") generation order that required the construction of a new natural gas power plant within a specific, local location did not amount to discrimination against interstate commerce or out-of-state interests under the dormant Commerce Clause.\footnote{178} The court reasoned that the new generation facility still must compete in the wholesale electricity market against other facilities, and that "the PSC did not act for the explicit purpose of protecting some in-state business . . . "\footnote{179}

In January 2011, the New Jersey legislature enacted the New Jersey Long-Term Capacity Pilot Project Act ("LCAPP") to incentivize the local construction efficient generation facilities.\footnote{180} The LCAPP explicitly instructed the New Jersey Board of Public Utilities to consider environmental, economic, and community benefits in establishing prequalification criteria for eligible generators.\footnote{181} Although the plaintiffs relied on evidence that demonstrated a preference for in-state generators and projects with local benefits, the court held they failed to show a violation of the commerce clause because "it appears reasonable that the Board would incentivize construction in areas where reliability concerns are in flux . . . the incentive for community benefits to generators in New Jersey appears reasonable."\footnote{182}

\footnote{177 Id. at 1078.}
\footnote{179 Id. at *51–52.}
\footnote{181 N.J. Stat. Ann. § 48:3-98.3(c) (6).}
\footnote{182 Hanna, 2013 WL 5603896, at *37. The New Jersey legislature intended LCAPP to mitigate electric grid reliability concerns that stemmed, in part, from a lack of local generation capacity development. N.J. Stat. Ann. § 48:3-98.2(e). Ostensibly, New Jersey sought to incentivize local generation development because solving the reliability issues through generators located outside of New Jersey would require upgrades to the existing transmission system. See id.}
IV. The Ability of Renewable Portfolio Standards to Withstand Dormant Commerce Clause Challenges

A. Speculation Concerning Challenges to State Renewable Portfolio Standards Under the Dormant Commerce Clause and Proposed Solutions

1. Constitutional and Practical Analysis of Different Geographical Preferences

The dormant Commerce Clause is a complex area of law that does not afford easily applied bright-line rules. As one court noted, “[h]armonizing the guidance set out in the Supreme Court’s many dormant Commerce Clause opinions is not a simple task.” Because different lines of scrutiny can simultaneously be invoked, analysis of renewable energy mandates exacerbates the difficulty of navigating the Supreme Court’s dormant Commerce Clause jurisprudence. Without a substantial body of caselaw on the subject, scholars and practitioners are left to speculate as to how a court would treat various renewable portfolio standard (RPS) geographic preferences. Furthermore, recent litigation brings into focus the tension between states attempting to incentivize local renewable construction and the concerns of private power generators over the marketability of their output. Some have expected additional litigation in this area for years.

Although an RPS geographic preference has never been held unconstitutional under the dormant Commerce Clause, commentators have argued that certain preferences are likely to violate the dormant Commerce Clause. For example, many commentators argue that an...
RPS conditioning renewable energy credit (REC) creation on the in-state generation of electricity would almost certainly run afoul of the Commerce Clause. Applying the Court’s analysis in *City of Philadelphia v. New Jersey*, this type of facial discrimination is virtually *per se* illegal because it allows the legislature to usurp the role of the free market in directing the flow of interstate commerce. For similar reasons, commentators suggest that an RPS conditioning eligibility on the in-region generation of electricity would likely be held unconstitutional.

An RPS can also condition eligibility on the in-state consumption of electricity generated using renewable resources. Such a requirement might not be discriminatory to the extent that an in-state consumption requirement serves as a proxy for realized local benefits. That argument assumes, however, that if renewable electricity is consumed in-state, the environmental, fuel diversity, and other benefits are also enjoyed locally. Realistically, the purported in-state benefits are susceptible to diffusing across state borders and being shared throughout an entire region. Where it is difficult to demonstrate that benefits actually accrue in-state, a court might find that an RPS conditioning

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190 See, e.g., Stiles, supra note 6, at 64; Endrud, supra note 84; Jacobi, supra note 189, at 1111–12.

191 See 437 U.S. 617, 624, 628 (1978). A commentator persuasively argues that in-state generation requirements fit squarely within the Court’s *City of Philadelphia* analytical framework. Engel, supra note 189, at 273 n.79. First, similar to the ban on importation of garbage, in-state generation requirements halt interstate commerce altogether. Id. Second, in both instances, the legislature employed facial discrimination based on the origin of interstate commerce. Id.

192 Compare Ferrey, supra note 58, at 85 (noting that a statute discriminating based on state boundaries is likely *per se* illegal), with Robin Kundis Craig, *Constitutional Contours for the Design and Implementation of Multistate Renewable Energy Programs and Projects*, 81 U. Colo. L. Rev. 771, 792 (2010) (commenting that multistate agreements that favor participating states are vulnerable to Commerce Clause scrutiny), and Jacobi, supra note 189, at 111–15 (arguing that states must disguise in-region location requirements to avoid dormant Commerce Clause scrutiny). In-region location requirements are distinguishable from in-state location requirements considering that electricity from multiple states can meet RPS obligations, but notwithstanding that distinction in-region location requirements facially discriminate against all states outside the region. Endrud, supra note 84, at 271; see Craig, supra, at 792.

193 RADER & HEMPLING, supra note 17, at app. A-4 to A-6.

194 Id. at app. A-5. In-state consumption requirements may be a proxy for local benefits because if a generator can show that electricity is physically being consumed in a state, then the state is receiving the benefits of the renewable electricity. Id. at app. A-4.

195 See id.
eligibility on in-region benefit delivery would be less discriminatory and equally efficacious.\textsuperscript{197} Therefore, if challenged in court, a proposed in-state consumption requirement might be rejected under the no-less-discriminatory-means approach from \textit{Dean Milk Co. v. City of Madison}.\textsuperscript{198}

There is considerably more optimism about the chances of other, less restrictive, RPS geographic preferences surviving constitutional scrutiny.\textsuperscript{199} An RPS that merely required renewable electricity to be sold to in-state consumers would be less likely to violate the dormant Commerce Clause.\textsuperscript{200} As there is no facial discrimination in such a requirement, the balancing test from \textit{Pike v. Bruce Church, Inc.} would be applied in lieu of strict scrutiny.\textsuperscript{201} Under the balancing test, the local benefits of reduced carbon emissions and diversification of the energy mix would be weighed against the incidental burdens on interstate commerce.\textsuperscript{202}

Although in-state sales requirements may be upheld as constitutional, not all commentators agree that such requirements are the solution for a state seeking to reap the benefits of its RPS.\textsuperscript{203} Conceding that an in-state sales requirement might not foster renewable construction within a given state, some argue that such a requirement would at least promote renewable growth, and the corresponding economic and environmental benefits, within a state’s geographic region.\textsuperscript{204} The benefits of reduced carbon output in a neighboring state will not be contained within the geopolitical state borders, but rather will spill over through-

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\item \textsuperscript{197} See \textit{Dean Milk Co. v. City of Madison}, 340 U.S. 349, 354 (1951); \textit{Rader & Hempling, supra} note 17. If a court found that an RPS requiring benefit delivery offered the same benefit as an in-state consumption requirement, but in a less discriminatory manner, the in-state consumption requirement could not pass constitutional muster. \textit{See Dean Milk}, 340 U.S. at 354.
\item \textsuperscript{198} 340 U.S. at 354. In discussing the viability of an in-state consumption requirement, commentators note that the administration of such a requirement would be highly complex because of the difficulty in tracking the movement of electrons. \textit{Rader & Hempling, supra} note 17, at app. A-5.
\item \textsuperscript{199} See \textit{Engel, supra} note 189, at 275–77; \textit{Endrud, supra} note 84, at 271; \textit{Jacobi, supra} note 189, at 1114.
\item \textsuperscript{200} See \textit{Engel, supra} note 189, at 275–77; \textit{Endrud, supra} note 84, at 271; \textit{Jacobi, supra} note 189, at 1114.
\item \textsuperscript{201} \textit{Pike v. Bruce Church, Inc.}, 397 U.S. 137, 142 (1970); \textit{Endrud, supra} note 84, at 271.
\item \textsuperscript{202} See \textit{Pike}, 397 U.S. at 142. An in-state sales requirement may burden out-of-state consumers in the form of higher prices. \textit{See Engel, supra} note 189, at 277. Nonetheless, one commentator argues that the burden is likely not excessive in relation to the benefits. \textit{See id.} Moreover, she argues that the current Supreme Court jurisprudence does not protect out-of-state consumers from price consequences that result from private parties availing themselves of legitimate business opportunities. \textit{Id.} at 278.
\item \textsuperscript{203} See \textit{Jacobi, supra} note 189, at 1114.
\item \textsuperscript{204} \textit{Engel, supra} note 189, at 276–77.
\end{itemize}
out the entire region. Likewise, the benefits of increased fuel diversity and the corresponding reduction in price volatility will not be contained within political state borders, but shared throughout the applicable power pool. Other commentators are less sanguine and argue that where any generator able to establish a contract path to the state is eligible to participate in the RPS program with no locational requirement, it would be difficult to ensure that the benefits of reduction in carbon emissions are actually enjoyed by the enacting state.

Finally, an RPS can condition eligibility for participation on the delivery of benefits. This approach is less constitutionally vulnerable than an explicit locational requirement because it can be employed without any facial discrimination. Commentators reason that “[a]lthough such a policy clearly will exclude distant generators, the exclusion will occur not because those generators are located in another state, but because their physical circumstances preclude benefits to the state.” Therefore, because of the physical constraints of the existing electrical infrastructure, an in-state benefit delivery requirement operates as a quasi in-region location requirement.

2. How Existing RPSs Can Remain in Effect

Although there appears to be concern among commentators that in-state and in-region renewable generation requirements may run afoul of the dormant Commerce Clause, there are several ways RPSs that contain these requirements can remain in effect. One possibility is lack of dormant Commerce Clause enforcement. Alternatively, commentators reason that “[a]lthough such a policy clearly will exclude distant generators, the exclusion will occur not because those generators are located in another state, but because their physical circumstances preclude benefits to the state.” Therefore, because of the physical constraints of the existing electrical infrastructure, an in-state benefit delivery requirement operates as a quasi in-region location requirement.

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205 Id.
206 See id.
207 Id., supra note 189, at 1114 (“[A] contract path does not always reflect the path of electricity. In most cases, an extremely distant renewable generator cannot offer many environmental benefits to a state without delivering electricity to the state and replacing some of the nonrenewable flow.”).
208 RADER & HEMPLING, supra note 17, at app. A-3.
209 Id.
210 Id.
211 See id. at app. A-3 to A-4. Commentators demonstrate this point by analyzing Maine’s RPS. Id. They note that Maine’s RPS restricts RPS eligibility to generators that can deliver renewable electricity into the New England Power Pool. Id. The logic behind Maine’s requirement that electricity be deliverable into the New England Power Pool is that if a generator is in close enough proximity to deliver into the Power Pool, Maine is likely to enjoy the myriad benefits associated with the availability of renewable energy capacity. Id.
212 Endrud, supra note 84, at 270.
213 Id.
Congress has the authority under the Commerce Clause to expressly allow state regulation that burdens interstate commerce. At present, geographic mandates in RPSs have not been subjected to federal enforcement claims. There simply has not been a successful challenge brought against an in-state or in-region generation requirement, but potential litigants may pursue the issue in the future.

A more permanent, albeit more difficult, method of preserving protectionist measures in state RPSs would be explicit authorization by Congress. At least one commentator has suggested that Congress should consider using its Commerce Clause powers to authorize legally vulnerable RPS programs because the societal benefits of increased renewable capacity outweigh the burdens some RPSs place on interstate commerce.

Lack of enforcement and congressional approval are means of escaping scrutiny under the dormant Commerce Clause. When a federal court first reviews an RPS’s constitutionality under the dormant Commerce Clause, as contemporary litigation suggests is imminent, RPSs will have to survive constitutional scrutiny.

The market participant doctrine is a potential defense for geographic preferences embedded in state RPSs. As long as the state is not acting in a regulatory role, the doctrine allows a state to use its “power of the purse” and discriminate against out-of-state interests while favoring and directing money towards in-state businesses and individuals. In the context of RPSs, however, one commentator has stated that “[t]he state is not expending state funds, except for administrative costs. It is not really putting state money into interstate commerce, as the state did in the Hughes case . . . it is branding and creating a new state-created product, and regulating utilities with requirements to purchase these products.” Other commentators also doubt the

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215 Endrud, supra note 84, at 270.
216 See Sovacool, supra note 188.
218 Endrud, supra note 84, at 285.
219 Id. at 270.
220 Ferrcy, supra note 58, at 85; Sovacool, supra note 188.
221 See Or. Waste Sys. V. Dep’t of Envtl. Quality, 511 U.S. 93, 114 (1994); S. Cent. Timber Dev., Inc. v. Wunnicke, 467 U.S. 82, 93 (1984) (“[I]f a State is acting as a market participant, rather than as a market regulator, the dormant Commerce Clause places no limitations on its activities.”).
222 Nowak & Rotunda, supra note 116, at 333–34.
223 Ferrcy, supra note 58, at 104.
market participant doctrine’s applicability to RPSs.\textsuperscript{224} Some question whether states can create multistate entities that enjoy the same protections as states themselves enjoy under the doctrine.\textsuperscript{225}

If a geographic preference in an RPS did not fit into the market participant exception, the goal of a state defending the claim would be to avoid the application of strict scrutiny.\textsuperscript{226} Failure to avoid strict scrutiny might virtually ensure that the RPS would be struck down as unconstitutional.\textsuperscript{227}

B. An In-Region Location Requirement Conditioning Outside Participation on Delivery into the Control Area Survives Strict Scrutiny

Assuming the market participant doctrine is inapplicable, the treatment of California’s low carbon fuel standards (LCFS) in Rocky Mountain Farmers Union v. Goldstone may lend credence to speculation that an RPS in-region location requirement violates the dormant Commerce Clause, depending on the district court’s findings on remand.\textsuperscript{228} With the exception of generators in adjacent control areas that deliver electricity into the ISO-New England (ISO-NE) control area, Massachusetts’s RPS contains such a requirement.\textsuperscript{229} Notwithstanding the probability that a reviewing court would apply strict scrutiny to Massachusetts’s RPS based on the explicit reference to location, the state can argue that the RPS falls into the narrow category of facially discriminatory yet constitutional state laws.\textsuperscript{230}

Massachusetts’s in-region location requirement serves legitimate local purposes, and those purposes could not be adequately served by reasonable non-discriminatory alternatives.\textsuperscript{231} There are functional differences between renewable fuels and fossil fuels that render non-discriminatory alternatives inadequate to serve Massachusetts’s legiti-

\textsuperscript{224} Craig, supra note 192, at 795–96.
\textsuperscript{225} Id. at 795.
\textsuperscript{226} Ferrey, supra note 58, at 106.
\textsuperscript{227} Or. Waste Sys. 511 U.S. at 101.
\textsuperscript{228} See 843 F. Supp. 2d 1071, 1089 (E.D. Cal. 2011) (applying strict scrutiny to California’s low carbon fuel standards).
\textsuperscript{230} See New Energy Co. of Ind. v. Limbach, 486 U.S. 269, 278 (1988) (“Our cases leave open the possibility that a State may validate a statute that discriminates against interstate commerce by showing that it advances a legitimate local purpose that cannot be adequately served by reasonable nondiscriminatory alternatives.”).
\textsuperscript{231} See 225 Mass. Code Regs. 14.05(5); RADER & HEMPLING, supra note 17, at 34.
In addition to the functional difference between renewable fuels and fossil fuels, the physics of the interstate transmission grid render distant generation facilities inadequate substitutes for local generation facilities.

1. Massachusetts’s In-Region Requirement Serves Multiple Local Purposes

Electricity generation accounts for approximately seventy percent of the United States’s aggregate greenhouse gas emissions and also produces other air pollutants that adversely affect human health. To the extent that Massachusetts’s RPS promotes the construction of renewable generation capacity in New England and the renewable generation displaces fossil fuel based generation, environmental benefits will accrue to the state. Even if fossil fuel generation is displaced in a neighboring state rather than inside of Massachusetts, the environmental benefits will be enjoyed throughout the region and not confined within geopolitical state borders.

Where a state has the unquestioned authority to provide for the health and safety of its citizenry, Massachusetts’s efforts to promote investment in local renewable energy serve a legitimate local purpose.

Massachusetts’s RPS also serves the legitimate local purpose of diversifying the fuels comprising New England’s wholesale electricity mix. Nearly fifty percent of ISO-NE’s available generation capacity depends on natural gas as a fuel source. This dependence on a single fuel source leaves ratepayers in Massachusetts vulnerable to fluctuations in the price of natural gas. Adding renewable energy sources to New England’s wholesale electricity portfolio will help insulate Massachusetts ratepayers from volatility in the natural gas markets by reducing the region’s dependence on natural gas.

Although Massachusetts’s RPS might seem analogous to the statute struck down in *Wyoming v. Oklahoma*, the environmental and fuel diver-

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232 Dworkin et al., supra note 28, at 531 (analyzing differences between renewable fuels and fossil fuels).
233 See Wong, supra note 55, at 8–9.
234 Reitze, supra note 2; Cappiello, supra note 3.
235 See Reitze, supra note 2; Cappiello, supra note 3.
236 See Rader & Hempling, supra note 17, at 34.
237 See Dean Milk, 340 U.S. at 354.
238 See id.
239 See Engel, supra note 189, at 266.
241 See id.
sity benefits make Massachusetts’s RPS distinguishable. In invalidating Oklahoma’s ten percent domestic coal requirement, the Supreme Court held that state statutes discriminating against interstate commerce are invalid “unless the discrimination is demonstrably justified by a valid factor unrelated to economic protectionism.” The Court proceeded to invalidate Oklahoma’s requirement because the state’s central justification involved the preservation of local industry. The enrichment of local interests, however, is “almost never a legitimate local purpose.” Conversely, Massachusetts’s in-region location requirement serves two goals that are entirely unrelated to economic protectionism.

2. Non-Discriminatory Alternatives Do Not Adequately Serve Massachusetts’s Local Interests

Commentators have suggested that RPSs conditioning eligibility on local benefit delivery, such as Maine’s, are constitutional. Previous scholarship correctly points out that these RPSs avoid facially discriminatory language, and therefore are likely to avoid strict scrutiny under the dormant Commerce Clause. RPS statutes like Maine’s are undoubtedly more likely to be upheld as constitutional because they avoid explicit locational requirements, but Massachusetts still can argue that such RPSs are not adequate alternatives for its qualified in-region location requirement.

Maine’s RPS considers a renewable generation resource eligible if its power can physically be delivered into the ISO-NE control area. This is considered a proxy for the ability to deliver benefits. In contrast, Massachusetts considers a generation facility eligible if it is located within ISO-NE or if it is in a control area adjacent to ISO-NE and deliv-

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242 See 502 U.S. 437, 458–59 (1992) (striking down an Oklahoma statute requiring in-state coal generation facilities to use ten percent Oklahoma-mined coal); Engel, supra note 189, at 266.
243 Wyoming, 502 U.S. at 454 (emphasis added).
244 Id. at 456.
246 See supra notes 222–228 and accompanying text.
247 See RADER & HEMPLING, supra note 17, at app. A-4; Jacobi, supra note 189, at 1130.
248 See RADER & HEMPLING, supra note 17, at app. A-4; Jacobi, supra note 189, at 1130.
249 See 225 Mass. Code Regs. 14.05(5) (describing conditions of out-of-region generators in Massachusetts’s RPS); RADER & HEMPLING, supra note 17, at app. A-4; Jacobi, supra note 189, at 1130.
251 See RADER & HEMPLING, supra note 17, at app. A-3 to A-4.
ers electricity into ISO-NE. The phraseology of Maine’s RPS is plainly less discriminatory than Massachusetts’s. Massachusetts imposes additional burdens on out-of-region generators and categorically excludes imports from control areas that are not adjacent to ISO-NE. Notwithstanding the appearance that Maine’s RPS is a less discriminatory substitute for Massachusetts’s RPS, Massachusetts can argue that Maine’s RPS does not produce precisely the same benefits in regulating to protect health and safety.

The electricity of out-of-region generators that can be delivered into ISO-NE will not necessarily be delivered into the region. Insofar as Maine’s RPS treats deliverability as a proxy for local benefits, Massachusetts’s RPS takes a more exacting approach in determining what generators do and do not produce local benefits. Under Maine’s RPS, renewable generation output that does not settle in ISO-NE can count towards a retail seller’s RPS requirements. The delivery requirement in Massachusetts’s RPS simply ensures that the output used to satisfy a retail seller’s RPS obligations actually produces the benefit of fuel diversity in ISO-NE during the hour the REC was created.

Even in arguing that benefit delivery requirements are facially neutral, commentators recognize that such requirements “clearly will exclude distant generators” because they cannot produce benefits for the state. A fact-based benefit delivery test can therefore have the same practical effect as Massachusetts’s RPS in that both exclude distant generators. Indeed, depending on the facts considered and the test’s objective criteria, if Massachusetts were to adopt a case-by-case approach, it is possible that some generators in the PJM region may not meet the benefit delivery criteria. In that case, Massachusetts’s inclusion of all generators in adjacent control areas may be less burdensome

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255 See Nowak & Rotunda, supra note 116.
259 See Rader & Hempling, supra note 17, at app. A-3.
260 See id. at app. A-3 to A-4.
3. Practical Considerations Justify Massachusetts’s Exclusion of Generators Located Beyond Adjacent Control Areas

Renewable fuel sources are typically not located in close proximity to areas with a significant demand for electricity. Unlike the fossil fuels conventionally used for electricity generation, renewable fuel sources are relatively difficult, if not impossible, to effectively transport. Fossil fuels such as coal and natural gas can be extracted in remote locations, stored, and then efficiently transported to generation facilities in compact channels such as railcars or pipelines. Essentially, there is an important functional difference between renewable electricity and fungible fossil fuels.

Because renewable fuel sources are not readily transportable like fossil fuels, the most efficient means of producing renewable electricity is to convert the fuel (wind, solar, hydro) to electricity at the source. The electricity then must immediately be sent to demand centers through transmission lines because unlike fossil fuels, which maintain their potential energy, electricity is not a form of energy that can be stored on a large scale. When renewable fuels are converted to electricity at the source, and then delivered to markets using transmission lines, electricity is lost along the way. Electricity traveling through transmission lines faces resistance that represents friction, and the resistance causes energy to be lost in transmission. Resistance and transmission losses are positively correlated with the length of transmission lines. Therefore,

\[\text{See}\ \text{supra}\ \text{note}\ 55.}\]

\[\text{See}\ \text{supra}\ \text{note}\ 55.}\]
holding all else equal, a distant renewable facility cannot displace as much fossil fuel based generation as a local renewable facility.\textsuperscript{273} Massachusetts’s RPS acknowledges and attempts to avoid this problem.\textsuperscript{274}

CONCLUSION

State and local statutes that facially discriminate against interstate commerce are virtually \textit{per se} unconstitutional, but \textit{Maine v. Taylor} leaves open narrow exceptions to this rule. An RPS’s in-region location requirement can survive strict scrutiny under the dormant Commerce Clause. First, this requirement will provide the enacting state benefits in the form of reduced air pollutant emissions, diversity in the wholesale electricity mix, and a degree of price stability. Second, these goals will most likely not be achieved with equal efficacy by available, non-discriminatory alternatives. In addition, fossil fuels can be stored for later consumption, and are therefore distinguishable from the transient energy provided by renewable sources. Furthermore, electricity losses in transmission diminish the utility of distant generation facilities relative to local generation facilities. RPS provisions conditioning eligibility on the delivery of local benefits do not provide the same assurance of benefit delivery as an in-region location requirement, and moreover, most likely are not an available alternative in practice. Although it may be difficult for states to prove the constitutionality of an in-region location requirement, it is not impossible.

\textsuperscript{273} See \textit{id}.
\textsuperscript{274} See 225 \textit{Mass. Code Regs.} 14.05(5)(b).