

BEFORE THE PUBLIC UTILITIES COMMISSION OF NEVADA

Investigation regarding the Energy Choice)
Initiative)
_____)

Docket No. 17-10001

REPLY COMMENTS OF THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION

The California Independent System Operator Corporation (ISO) respectfully submits these reply comments in response to the October 11, 2017 notice of investigation and workshop (Notice) issued by the Public Utilities Commission of Nevada (Commission) and opening comments filed on December 8, 2017. The ISO looks forward to discussing its comments in more detail at the Commission’s upcoming workshops.

I. Introduction

The ISO’s opening comments focused on providing an overview of the ISO, the existing synergies between the ISO and Nevada electric systems, and the potential benefits and issues to be considered in establishing or joining a wholesale electricity market. Numerous other parties commented on the benefits Nevada could realize by joining a wholesale market, in several cases specifically naming the ISO as the preferred wholesale market option. The ISO agrees that Nevada should embark on an assessment of the options for further participation in wholesale markets no matter what the outcome of the Energy Choice Initiative (ECI). The precise wholesale market services that Nevada will need if it moves to a competitive retail energy market are dependent on the policies and regulations that develop as a result of the constitutional change. Exploring the potential benefits of wholesale market participation in advance of the ECI vote presents a “no regrets” policy decision that will position Nevada to capitalize on its options after the November 2018 ECI vote.

While the majority of commenters supported further investigation of wholesale market options, some presented questions regarding wholesale market participation. In these reply comments, the ISO addresses these questions and provides additional information regarding wholesale market options available to Nevada. The ISO provides these comments to ensure that the Commission has a full record to develop its report to the Governor’s Committee on Energy

Choice¹ while providing additional clarifications regarding the scope of federal government jurisdiction in wholesale markets, ISO governance, and possible extension of day-ahead market services to Energy Imbalance Market (EIM) participants.

II. Discussion

A. Scope of Federal Jurisdiction

Several parties contend that participation in the ISO could increase the scope of Federal Energy Regulatory Commission (FERC) jurisdiction over Nevada’s energy policy. These concerns are largely misplaced, as FERC’s jurisdiction is defined in the Federal Power Act (FPA) and is not directly tied to participation in an organized wholesale market such as the ISO. Rather, the FPA grants FERC jurisdiction over “the transmission of electric energy in interstate commerce and...the sale of electric energy at wholesale in interstate commerce.”² “Sale of electric energy at wholesale” is defined as “a sale of electric energy to any person for resale.”³ Participation in an organized wholesale market – whether through the ISO, a separate Nevada-only system operator, or another regional transmission organization – does not increase the scope of FERC’s jurisdiction, though it would increase the amount of wholesale market participants and transactions in Nevada.

The ISO also notes that the FPA explicitly protects state jurisdiction over generation, local distribution, and retail rates regardless of the geographic footprint of the ISO. The FPA limits FERC’s jurisdiction to “extend only to those matters which are not subject to regulation by the States.”⁴ The FPA further states that FERC does not have authority “over facilities used for the generation of electric energy or over facilities used in local distribution or only for the transmission of electric energy in intrastate commerce, or over facilities for the transmission of electric energy consumed wholly by the transmitter.”⁵ The FPA allows states to retain control over the “[n]eed for new power facilities, their economic feasibility, and [retail] rates and

¹ The Commission’s Notice of Energy Choice Initiative Investigation provides that the “purpose of this investigation is to create a preliminary report to identify and discuss objective decision-points and facts...” regarding how to best implement the ECI, if it is approved in 2018.

² 16 U.S.C. § 824(b)(1).

³ 16 U.S.C. § 824(d).

⁴ 16 U.S.C. § 824(a).

⁵ 16 U.S.C. § 824(b)(1).

services.”⁶ States also retain authority over transmission siting determinations.⁷

In recent years, several scholars have reviewed whether ISO expansion would impact state authority to enact environmental or clean energy laws. These reviews have consistently concluded that enhanced western grid integration under a regional system operator would not expose state clean energy policies to additional risks of preemption under the FPA or challenges based on the dormant Commerce Clause.⁸ It is true that participation in an organized wholesale market will increase wholesale market activities, which will be regulated by FERC. However, this increase wholesale market activities will not impede Nevada’s ability to make independent choices regarding its own energy policies. Iowa’s experience demonstrates this outcome: through participation in a regional transmission organization, the state has achieved significant growth in renewable resources in excess of its renewable portfolio requirements. In 2016, Iowa produced approximately 36% of its energy from wind,⁹ largely based on the combination of low-cost wind and improved transmission access and integration provided by the regional transmission organization.¹⁰ Nevada, with its high-quality solar resources and strong transmission interconnections with the ISO, is similarly situated to advance its renewable energy goals through increased wholesale market participation.

B. ISO Governance

Several commenters provided comments on the ISO’s current governance structure. The ISO’s basic Board structure is established in California statute, as result of restructuring in approved in 1996. The ISO’s Board of Governors is comprised of five members that meet FERC’s requirements for independence.¹¹ These members are appointed by the Governor of California and are subject to confirmation by the state Senate. There are currently two state

⁶ *Pacific Gas & Elec Co. v. State Energy Res. Conservation & Dev. Comm’n*, 461 U.S. 190, 205 (1983).

⁷ See FERC Order No. 1000, paragraph 156 (“Final Rule in no way involves an exercise of authority over those specific substantive matters traditionally reserved to the states, including integrated resource planning, or authority over siting, permitting, or construction of transmission solutions.”)

⁸ See generally, Yale Environmental Protection Clinic report on Enhanced Western Grid Integration (2017) included herein as Appendix A; See also, Carlson & Boyd, Evaluation of Jurisdictional and Constitutional Issues Arising from CAISO Expansion to include PacifiCorp Assets (2016), included herein as Appendix B.

⁹ Iowa Utilities Board, Iowa’s Electric Profile. <https://iub.iowa.gov/electric-profile>.

¹⁰ The Role of RTO/ISO Markets in Facilitating Renewable Generation Development. http://files.brattle.com/files/5733_the_role_of_rto_iso_markets_in_facilitating_renewable_generation_development.pdf.

¹¹ *California Indep. Sys. Operator Corp. v. F.E.R.C.*, 372 F.3d 395, 397 (D.C. Cir. 2004). (“FERC deems it crucial that an ISO be independent of the market participants so that decisions of policy, operation, and dispute resolution be free of the discriminatory impetus inherent in the old system.”)

Assembly bills¹² pending at the California legislature that would render inoperative existing law governing the appointment of the ISO Board of Governors and would replace these provisions with language authorizing the transformation of the ISO into a regional organization.¹³ While the ISO cannot anticipate any particular direction from the Legislature or Governor, the ISO is hopeful for a robust discussion on a transition of its governance structure quickly.

Absent 2018 legislative action, the ISO believes there are options that can either provide a transitional framework for meaningful engagement from interested parties or serve as an interim step as the ISO continues to pursue the timely transformation of its structure to meet the needs of Nevada by its 2023 milestone. In addition, the exploration of day-ahead market services to EIM participants brings an opportunity to enhance the existing EIM governance framework.

C. Extension of Day-Ahead Market Services to EIM Participants

In its opening comments, the ISO noted that it will explore enhancements to its day-ahead market services and potentially extend its day-ahead services to EIM participants. On December 14, the ISO conducted a stakeholder meeting in which it provided more detail on the initial scope of these activities.¹⁴ The extension of the day-ahead market to EIM entities will be designed to provide even greater benefits by enabling participating entities to transact larger volumes through the wholesale market. The extension of day-ahead market services to EIM participants could include expansion of the role of the EIM Governing Body and Body of State Regulators. As contemplated, the participation of EIM parties in the day-ahead market would allow the ISO to optimize the start-up and shut-down of resources based on the forecasted demand for the next 24 hours, thereby increasing the potential benefits beyond those available in the real-time EIM. At the same time, participation would allow existing balancing authorities to retain reliability responsibilities and administration of their open access transmission tariffs, while allowing states to maintain full control over integrated resource planning. This extended day-ahead market will provide an option for Nevada to explore as an incremental increase in wholesale market participation that is short of full integration with the ISO and available whether or not the ECI is approved by Nevada voters.

¹² California Assembly Bills 726 and 813.

¹³ See California Assembly Bill 813.

¹⁴ An excerpt from the ISO's presentation on extended day-ahead market options is included as Appendix C.

D. Evaluation of Regional Market Attributes

Regulatory Operations Staff (Staff), Calpine Corporation, Environmental Defense Fund, Natural Resources Defense Council (NRDC), and Western Resource Advocates (WRA) each identify important issues that should be considered when evaluating Nevada's options for wholesale market participation. The ISO generally agrees with the issues identified and highlights a few of those issues below.

1. Stakeholder Representation

Both Staff and WRA commented that meaningful stakeholder representation is an important factor in assessing wholesale market options.¹⁵ The ISO agrees that stakeholder representation is a vital component to participation in a wholesale market. The ISO outlined its open and transparent policy development, stakeholder engagement, and board processes in its opening comments, and reiterates here its commitment to this stakeholder-driven model.

2. Transmission Connectivity

Staff commented that policymakers should “[e]nsure there is enough transmission capacity and that power flows smoothly, especially to load pockets.”¹⁶ Other parties, including WRA, Calpine, and NRDC, also comment on the importance of transmission connectivity, while noting the strong existing transmission interconnections between the ISO and the Nevada transmission systems.¹⁷ The ISO agrees that to achieve the highest level of benefits, Nevada should evaluate wholesale market options based on existing and planned transmission infrastructure connections.

3. Size, Diversity, and Topology of the Market

WRA noted that “multiple resources have demonstrated that the greater the number of market participants, the greater the diversity in market topology, and the greater the diversity in loads and resources, the greater the net benefits.”¹⁸ WRA specifically cited the ISO's studies on regionalization benefits conducted in response to California Senate Bill 350. It is true that net benefits tend to increase with greater diversity in loads and resources. In opening comments, the ISO presented preliminary information regarding potential capacity benefits based on load diversity between the ISO and NV Energy systems. The ISO believes that the potential benefits

¹⁵ Staff Opening Comments, p. 23:4-6; WRA Opening Comments, p. 23-24.

¹⁶ Staff Opening Comments, p. 24:7-8.

¹⁷ Calpine Opening Comments, p. 9; NRDC Opening Comments, p. 9; WRA Opening Comments, p. 21.

¹⁸ WRA Opening Comments, p. 21.

to Nevada should be further studied and quantified, and looks forward to cooperating with NV Energy and Nevada policymakers to develop such information.

4. Ease of Entry and Exit

Several parties commented that policymakers should consider the ease of entry and exit into a wholesale market. The ISO agrees that these are important considerations, and points out that NV Energy's current participation in the EIM should ease the transition into the ISO's system. To enter the EIM, NV Energy was required to install metering and communications hardware to enable effective communication with the ISO. Because the appropriate metering and communications hardware is already in place, the incremental costs for full participation in the ISO would be lower.¹⁹ Moreover, the CAISO only requires advance notice and does not apply exit fees on departing participants. Participating transmission owners are required to provide two-year advance notice. Balancing authorities participating in the EIM are required to provide six-month advance notice and there is no exit fee or other termination charge for withdrawal.

III. Conclusion

The opening comments filed in this proceeding indicate strong stakeholder support for exploring Nevada's wholesale market opportunities with the ISO. The ISO has already conducted detailed benefit studies on western wholesale market expansion and its impacts on California ratepayers pursuant to California Senate Bill 350 that can be used as a resource to help study Nevada's potential benefits from a wholesale market. The ISO looks forward to discussing this and other relevant issues at the Commission's upcoming workshop.

Dated: January 3, 2018

Respectfully submitted,

/s/ Jordan Pinjuv

Roger E. Collanton

General Counsel

John C. Anders

Assistant General Counsel

Jordan Pinjuv

Senior Counsel

(Nevada State Bar No. 10718)

¹⁹ NV Energy estimated about \$10 million for one-time capital costs associated with EIM. Since joining the EIM in December 2015, NV Energy has accrued \$34.16 million of benefits as of September 30, 2017, according to the published *Western EIM Benefits Reports*. Thus, the up-front costs to join the EIM have been recovered.

California Independent System
Operator Corporation
250 Outcropping Way
Folsom, California 95630
Tel: (916) 351-2249
Fax: (916) 608-7222
Email: janders@caiso.com
jpjuv@caiso.com

*Counsel for the California Independent
System Operator Corporation*

Appendix A

Yale Environmental Protection Clinic report on Enhanced Western Grid Integration (2017)

Enhanced Western Grid Integration: A Legal and Policy Analysis of the Effects on California's Clean Energy Laws

Juliana Brint, Josh Constanti, Franz Hochstrasser, and Lucy Kessler



Yale
ENVIRONMENTAL PROTECTION CLINIC



May 2017

Yale Law School and Yale School of Forestry & Environmental Studies

I. Executive Summary	2
II. Background	4
A. CAISO and the Western Energy Imbalance Market	4
B. The Effort to Create a Regional ISO	6
1. Governance	7
C. Legal Principles	8
1. FERC Jurisdiction	8
a. FERC Jurisdiction Under the Federal Power Act	9
b. Powers Reserved to the States	10
c. Defining Electricity “in Interstate Commerce”	11
2. Preemption Issues	13
3. Dormant Commerce Clause Issues	16
4. Summary of Key Legal Principles	18
III. Impact of the Shift to a Regional ISO	19
A. California’s Clean Energy Policies	19
1. Renewable Portfolio Standard	19
a. Existing Policy	19
b. Policy Analysis	21
c. Legal Analysis	24
2. Greenhouse Gas Emissions Performance Standard	33
a. Existing Policy	33
b. Policy Analysis	34
c. Legal Analysis	37
3. Carbon Cap-and-Trade Program	42
a. Existing Policy	42
b. Policy Analysis	44
c. Legal analysis	45
B. Benefits from Enhanced Grid Integration	49
1. Cost Savings	49
2. Integrating Renewable Energy Resources	50
3. Job Creation	51
IV. Conclusion	52
Acknowledgements	52
Contact Information	52

Cover image: *Western Interconnection Balancing Authorities*, W. Elec. Coordinating Council,
https://www.wecc.biz/_layouts/15/WopiFrame.aspx?sourcedoc=/Administrative/WECC_BAMap.pdf.

I. Executive Summary

This analysis addresses the legal and policy merits of a transition to a fully integrated electricity grid in the Western United States through the creation of a regional independent system operator. We summarize the increasing constraints that today's balkanized grid imposes on system-wide electricity costs and reliability, address the potential benefits of enhanced grid integration, and evaluate potential legal risks for key California clean energy policies.

Wind and solar power are the dominant sources of new renewable energy in the United States and can provide numerous benefits to the economy and the environment. However, the variable nature of these technologies can create grid integration challenges for electricity system operators in some circumstances because renewable energy supply does not necessarily track demand. As California increases its renewable energy generation, it often has to curtail or shut down clean energy that is produced when demand is low. In February 2017, the California Independent System Operator (CAISO) warned that it may need to curtail 6,000 megawatts (MW) to 8,000 MW of renewable energy capacity during some hours in the spring of 2017,¹ which is equivalent to 60 to 80% of the total installed large-scale solar generating capacity in the CAISO.² This means that CAISO will not be able to take full advantage of this inexpensive and pollution-free generation. One way to improve grid reliability, minimize curtailments, and reduce the variability of renewable energy is to create a regional independent system operator to balance supply and demand across a larger geographic area.

Within the Western grid (known as the "Western Interconnection"), electricity is managed by 38 separate balancing authorities (BA) across the United States, Canada, and Mexico. All 38 BAs, including CAISO, are part of the synchronized Western Interconnection but each BA is independently responsible for balancing supply and demand in its own territory. In order to improve reliability, cut costs, and increase efficiency, a number of these balancing authorities are partnering in the Western energy imbalance market (EIM), which is managed by CAISO. The EIM is a "real-time market" that adjusts for forecast errors between supply and demand every five minutes. This regional market has demonstrated numerous benefits of enhanced regional grid integration, such as reducing costs and greenhouse gas (GHG) emissions. However, the EIM is limited in that it only allows for incremental adjustments to generation dispatch schedules and only captures a small portion of the region's wholesale electricity market. CAISO, Western states, and other stakeholders throughout the West are exploring the creation of a more fully integrated regional electricity market that would be comprehensively managed by a single system operator and include a day-ahead market and other benefits. Such a market could enhance utilities' resource planning, improve grid efficiency and reliability, and

¹ Steve Berberich, *CEO Report*, Cal. Indep. Sys. Operator Corp. (Feb. 9, 2017), <https://www.caiso.com/Documents/CEOREport-Feb2017.pdf>. Installed renewable capacity in the CAISO region is 20,445.9 MW as of March 2017.

² See *Today's Outlook*, Cal. Indep. Sys. Operator Corp. , <http://www.caiso.com/Pages/TodaysOutlook.aspx> (last visited Apr. 24, 2017).

save utility customers money while meeting the West’s demand for reliable, affordable, and clean electricity.

This report examines the potential impacts of an integrated Western electricity market on California’s clean energy policies, including the state’s renewable portfolio standard (RPS), the greenhouse gas emissions performance standard (EPS) for long-term contracts with baseload power plants, and the cap-and-trade program established by AB 32, the state’s groundbreaking climate law. We find that enhanced Western grid integration—through the creation of a regional ISO—does not interfere with these clean energy policies, and it instead can assist California in meeting its objectives by creating more market opportunities for renewable energy, reducing greenhouse gas emissions and other pollution, and improving the transmission system’s efficiency and reliability. CAISO is not now, and would not become a policy-making body, but like other multi-state grid operators it would assist the states it serves in achieving their own policy objectives at lower cost while improving electric system reliability.

While California’s clean energy policies could be the subject of future legal challenges, the likelihood and prospects of such challenges would *not* be affected by enhanced Western grid integration.

Two provisions of the U.S. Constitution pose theoretical threats to California’s clean energy laws: the Supremacy Clause³ and the Commerce Clause.⁴ Under the Supremacy Clause, a state law is preempted and invalid if it conflicts with a federal law,⁵ such as the Federal Power Act (FPA) or the Public Utility Regulatory Policies Act (PURPA). Additionally, the “dormant” Commerce Clause imposes limits on state actions that discriminate against out-of-state commerce,⁶ unduly burden interstate commerce,⁷ or assert control over conduct that occurs outside the state’s borders.⁸ Opponents of regional grid integration might argue that the creation of a regional power market could call the legality of California’s clean energy laws into question under either of these two provisions.

Our analysis indicates that the expansion of CAISO into a regional system operator across several states would not make these challenges any more likely to succeed.⁹ Given the highly interconnected nature of the electric grid in the Western United States through the Western

³ U.S. Const. art. IV, para 2 (requiring that federal law “shall be the supreme Law of the Land”).

⁴ U.S. Const. art. I, § 8, cl. 3 (giving Congress power to “regulate Commerce with foreign Nations, and among the several States, and with the Indian Tribes.”).

⁵ See, e.g., *Hughes v. Talen Energy Mktg., LLC*, 136 S. Ct. 1288, 1297 (2016) (“Put simply, federal law preempts contrary state law.”).

⁶ *Ore. Waste Sys., Inc. v. Dep’t of Env’tl. Quality of Ore.*, 511 U.S. 93, 99 (1994).

⁷ *Pike v. Bruce Church, Inc.*, 397 U.S. 137, 142 (1970).

⁸ *Edgar v. MITE Corp.*, 457 U.S. 624, 642-43 (1982); *Healy v. Beer Inst.*, 491 U.S. 324, 336 (1989). Note that the Ninth and Tenth Circuits, which cover most of the Western United States, including California, have taken a narrow view of this extraterritoriality doctrine. *Association des Eleveurs de Canards et D’oies du Quebec v. Harris*, 729 F.3d 937, 951 (9th Cir. 2013); *Energy & Env’t. Legal Inst. v. Epel*, 793 F.3d 1169, 1175 (10th Cir. 2015).

⁹ See *infra* Part III.A.

Interconnection, wholesale sales and transmission of electricity in the CAISO footprint are *already* treated as forms of “interstate commerce”¹⁰ subject to regulation by the Federal Energy Regulatory Commission (FERC) under the FPA. California laws and regulations affecting wholesale electricity transactions could be subject to challenges today if they conflict with federal energy law, and those same laws and regulations are already subject to scrutiny under the dormant Commerce Clause. As long as California and other Western states remain within the Western Interconnection, the potential for Supremacy Clause and dormant Commerce Clause challenges will not change. It is noteworthy that to date there have been no such challenges.

In sum, enhanced Western grid integration under a regional system operator would not expose California’s clean energy policies to additional risks of preemption under the FPA or challenges based on the dormant Commerce Clause. Shifting to a regional grid operator would enable more efficient, affordable, and reliable integration of renewable resources without increasing the legal risk to California’s clean energy policies.

II. Background

A. CAISO and the Western Energy Imbalance Market

The fragmented Western electric grid, known as the Western Interconnection, spans the area from California to the Great Plains, and from Western Canada to Northern Baja California, Mexico. Although the grid is electrically interconnected, electricity is independently dispatched across 38 balancing authorities—electric utilities and other entities that integrate resource plans ahead of time, maintain load interchange-generation balance, and support Interconnection frequency in real time.¹¹

CAISO, a nonprofit public benefit corporation, is the largest balancing authority in the Western Interconnection.¹² CAISO’s grid encompasses 80% of California, and a small portion of Nevada, and CAISO currently imports and exports power across the broader Western region. CAISO is regulated by FERC under the Federal Power Act (FPA) and is synchronously connected to the rest of the Western Interconnection. CAISO and other ISOs throughout the United States run competitive wholesale power markets, plan new transmission infrastructure, and maintain grid reliability. CAISO forecasts demand on a day-ahead basis and adjusts for forecast errors every five minutes, accounts for operating reserves, and dispatches the power plants with the lowest

¹⁰ See, e.g., *New York v. FERC*, 535 U.S. 1, 7 (2002) (citing *Fla. Power & Light Co.*, 37 F.P.C. 544, 549 (1967) and *Fed. Power Comm’n v. Fla. Power & Light Co.*, 404 U.S. 453, 469 (1972)) (noting that outside of Hawaii, Alaska, and the Texas Interconnect, “any electricity that enters the grid immediately becomes a part of a vast pool of energy that is constantly moving in interstate commerce.”).

¹¹ *Glossary of Terms Used in NERC Reliability Standards*, N. Am. Elec. Reliability Corp. (Apr. 4, 2017), http://www.nerc.com/files/glossary_of_terms.pdf.

¹² *Company Information and Facts*, Cal. Indep. Sys. Operator Corp. (2016), https://www.caiso.com/Documents/CompanyInformation_Facts.pdf.

operating costs to meet demand, while ensuring sufficient transmission capacity to maintain reliable grid operations under all foreseeable conditions.¹³

In October 2014, CAISO partnered with an Oregon-based utility, PacifiCorp, to launch the Western EIM, a “real-time market.” By entering into a shared market, the balancing authorities were able to improve management of short-term fluctuations of supply, increase reliability, lower costs for their customers, and better integrate renewable energy resources. CAISO manages and coordinates the EIM, which is now comprised of three additional utilities (NV Energy, Arizona Public Service, and Puget Sound Energy) spanning eight states, including Arizona, California, Idaho, Nevada, Oregon, Utah, Washington, and Wyoming (see Figure 1).¹⁴ Due to the demonstrated benefits of the Western EIM, a number of additional BAs have announced their intention to join, including Portland General Electric, Idaho Power, the Balancing Authority of Northern California (BANC), and the Sacramento Municipal Utility District (SMUD). Additionally, Utah Associated Municipal Power Systems (UAMPS), the Los Angeles Department of Water and Power, Seattle City Light, and the Mexican grid operator El Centro Nacional de Control de Energía (CENACE) Baja Norte have indicated that they are exploring participation.¹⁵

Figure 1: Map of the Western Energy Imbalance Market (EIM)



Figure 1. The EIM is managed by CAISO and comprised of four additional utilities: PacifiCorp, NV Energy, Arizona Public Service, and Puget Sound Energy across eight states. Portland General Electric, Idaho Power, the Balancing Authority of Northern California (BANC), and the Sacramento Municipal Utility District (SMUD) are planning to join the Western EIM as well.

¹³ *Market Processes and Products*, Cal. Indep. Sys. Operator Corp., <http://www.caiso.com/market/Pages/MarketProcesses.aspx>.

¹⁴ *ISO and PacifiCorp Outline EIM Implementation Plans for October 1*, Cal. Indep. Sys. Operator Corp. (Sept. 15, 2014), <http://www.caiso.com/Documents/ISOandPacifiCorpOutlineEIMImplementationPlans-October1.htm>.

¹⁵ *Western EIM Produces Significant Savings Despite Low Demand*, Cal. Indep. Sys. Operator Corp. (Jan. 31, 2017), <http://www.caiso.com/Documents/WesternEIMProducesSignificantSavingsDespiteLowDemand.pdf>.

Since November 2014, CAISO estimates that the EIM has saved participants \$142.6 million.¹⁶ The larger geographic footprint facilitates the dispatch of more renewable energy resources, which have cheaper operating costs than coal or gas-fired power plants.¹⁷ In an integrated market, the plants with the lowest operating costs are always dispatched first. If not for the EIM, the California Energy Commission (CEC) estimates that CAISO would have had to curtail 272,000 MWh of renewable energy in the first half of 2016, offsetting 116,000 metric tons of carbon emissions from fossil fuel generation.¹⁸

The Western EIM demonstrates the benefits made possible by streamlining balkanized grid operations, but it is not a substitute for a full regional ISO. The real-time market only comprises a small portion of the overall wholesale electricity market (1% to 3% of the ISO's total wholesale energy costs),¹⁹ and is primarily designed to allow utilities to purchase power in small increments to correct for forecast errors from their day-ahead schedules. A regional ISO would allow participants to engage in more fully coordinated transmission planning, which can eliminate redundancy, increase efficiency, allow for the dispatch of more renewable energy, and improve the reliability of the grid. The EIM does not enable CAISO to view the full market of generators, nor does it allow for coordinated transmission planning and dispatch of renewables and other power plants across the Interconnection.

B. The Effort to Create a Regional ISO

California's S.B. 350, enacted in 2015, requires CAISO to consider the environmental and economic impacts of a regional grid, and submit a proposal to the governor for enhanced grid integration.²⁰ Other efforts are underway across the region to explore potential options for an expanded system operator.

Each balancing authority currently operates independently, and each encounters similar challenges to reliability, integrating variable energy resources, and resource adequacy. Proponents of the Western integrated grid assert that grid integration would deliver a range of

¹⁶ *Western EIM Produces Significant Savings Despite Low Demand*, Cal. Indep. Sys. Operator Corp. (Jan. 31, 2017),

<http://www.caiso.com/Documents/WesternEIMProducesSignificantSavingsDespiteLowDemand.pdf>.

¹⁷ *Regional Energy Market Background*, Cal. Indep. Sys. Operator Corp. (July 12, 2016), <http://www.caiso.com/Documents/RegionalEnergyMarket-FastFacts.pdf>.

¹⁸ *Tracking Progress: Resource Flexibility*, Cal. Energy Comm'n (Dec. 15, 2016), http://www.energy.ca.gov/renewables/tracking_progress/documents/resource_flexibility.pdf.

¹⁹ *Regional Coordination in the West: Benefits of PacifiCorp and California ISO Integration*, Energy & Env'tl. Econ., Inc. (Oct. 2015), <https://www.caiso.com/Documents/StudyBenefits-PacifiCorp-ISOIntegration.pdf>.

²⁰ *FAQ*, Cal. Indep. Sys. Operator Corp. (Sept. 2016), <https://www.caiso.com/Documents/ISORegionalEnergyMarketFAQ.pdf>.

benefits including reduced costs, enhanced reliability, higher levels of renewable energy resources, avoided capacity redundancy, and increased resource flexibility.²¹

Grid integration would allow balancing authorities to reduce their energy reserve requirements. Currently, individual BAs have to plan for resources to meet their own peak loads. With grid integration, participating entities can instead plan to meet the region's peak load, resulting in a lower required peak generation capacity and lower costs for customers.²²

Additional cost savings could occur from the elimination of redundant transmission access charges that are currently used with a balkanized system. Renewable energy is often transmitted over long distances through multiple transmission systems to load centers, and in the current non-ISO West this electricity incurs a wheeling charge or toll for "each segment of the contract-path."²³ Therefore, removing these multiple charges will reduce the cost of renewable energy resources.²⁴

Regional grid integration is expected to improve efficiency in numerous ways. The introduction of a regional day-ahead market can fully optimize for cost and efficiency, whereas the current EIM real-time market can only make incremental improvements. A small market can create oversupply situations whereby energy is wasted through curtailment. In addition, under a balkanized system, bilateral transmission contracts may end up unnecessarily reserving and constraining transmission capacity. Grid integration would allow this reserved transmission to be redispatched.

1. Governance

Under current California law, CAISO's five-member board is "appointed by the Governor and subject to confirmation by the Senate."²⁵ In order for CAISO to become a regional system operator, California law requires that the ISO follow a process set forth in 2015's S.B. 350.²⁶ That law says that "modifications" to CAISO's "governance structure, through changes to its bylaws or other corporate governance documents, would be needed to allow this transformation [into a regional organization]."²⁷ Under S.B. 350, CAISO is responsible for proposing

²¹ *Regional Coordination in the West: Benefits of PacifiCorp and California ISO Integration*. Energy and Environmental Economics, Inc. (Oct. 2015), <https://www.aiso.com/Documents/StudyBenefits-PacifiCorp-ISOIntegration.pdf>

²² *Regional Coordination in the West: Benefits of PacifiCorp and California ISO Integration*, Energy & Evtl. Econ., Inc. (Oct. 2015), <https://www.aiso.com/Documents/StudyBenefits-PacifiCorp-ISOIntegration.pdf>.

²³ Rebecca Johnson, *Grid Integration in the West: Bulk Electric System Reliability, Clean Energy Integration, and Economic Efficiency*, Hewlett Found. (July 19, 2015), <http://americaspowerplan.com/wp-content/uploads/2015/08/Grid-Integration-in-the-West-07-19-15-Updated.pdf>.

²⁴ *Id.*

²⁵ Cal. Pub. Util. Code § 337 (West 2017).

²⁶ S.B. 350 (2015); Cal. Pub. Util. Code §§ 352(b), 359.5 (West 2017).

²⁷ Cal. Pub. Util. Code § 359.5(d) (West 2017).

governance changes, but the California legislature must “enact[] a statute implementing the revised governance changes.”²⁸

Any changes to CAISO’s governance structure will also need FERC approval. The Commission requires that regional transmission organizations be “independent of market participants.”²⁹ In order to meet this standard, “any non-stakeholder directors must not have any financial interests in any market participants” and “the RTO must have a decision-making process that is independent of control by any market participant or class of participants.”³⁰

C. Legal Principles

This section summarizes important concepts that help explain potential legal challenges to California’s clean energy policies and why the legal vulnerabilities of such policies would not change based on enhanced Western grid integration. It begins by discussing the current scope of the Federal Energy Regulatory Commission’s (FERC) jurisdiction, highlighting (1) the authority granted to FERC by the Federal Power Act, (2) powers reserved to the states, and (3) how the important jurisdictional term “electricity in interstate commerce” has been construed by FERC and federal courts. This section concludes by discussing two key constitutional issues: preemption of state laws based on the Supremacy Clause and the dormant Commerce Clause’s limits on state regulatory activity. While this report discusses potential challenges to state law, it is not intended to imply that any such challenges would be successful.

The key takeaway is that a move to a regional ISO would not expand FERC’s authority over California’s electricity system, because FERC already has jurisdiction over CAISO. Likewise, enhanced Western grid integration would not open the door to new or stronger dormant Commerce Clause challenges, because wholesale power transactions on the California grid are already considered to be part of interstate commerce.

1. FERC Jurisdiction

The Federal Power Act (FPA) establishes a system of split jurisdiction, with FERC exercising authority over transmission and wholesale sales of electricity “in interstate commerce” and state regulators retaining power over retail sales as well as generation and local distribution facilities. This section discusses the most important jurisdictional provisions of the FPA. It also explains why FERC has jurisdiction over wholesale sales of electricity even when both the generator and the purchaser of the power are in California.

²⁸ Cal. Pub. Util. Code § 395.5(e)(5) (West 2017).

²⁹ Order No. 2000: Regional Transmission Organizations, 89 FERC ¶ 61,285, at 152 (1999).

³⁰ *Id.*

a. FERC Jurisdiction Under the Federal Power Act

As a federal agency, FERC is only able to exercise its regulatory authority pursuant to a statutory grant of power.³¹ The FPA is FERC's enabling statute and determines the scope of its jurisdiction over the electricity industry.

The FPA grants FERC jurisdiction over “the transmission of electric energy in interstate commerce and ... the sale of electric energy at wholesale in interstate commerce.”³² The term “sale of electric energy at wholesale” is defined in the statute as “a sale of electric energy to any person for resale.”³³

The FPA gives FERC authority over “all *facilities* for such transmission or sale of electric energy.”³⁴ FERC is also responsible for ensuring that “[a]ll *rates and charges*, made demanded, or received by any public utility for or in connection with the transmission or sale of electric energy subject to the jurisdiction of the Commission, and all *rules and regulations* affecting or pertaining to such rates or charges shall be just and reasonable.”³⁵ The statute defines “public utility” as “any person who owns or operates facilities subject to the jurisdiction of the Commission” with some specific exceptions.³⁶ Under this statutory construct, CAISO is a “public utility” subject to FERC jurisdiction because (1) it operates transmission facilities, (2) its markets set the rates for wholesale electricity sales, and (3) its market rules “affect[] or pertain[] to” rates for wholesale electricity sales.³⁷ CAISO has been subject to FERC jurisdiction since its inception.³⁸ Additionally, since FERC has jurisdiction over all “public utilities” that own

³¹ *Atlantic City Elec. Co. v. FERC*, 295 F.3d 1, 8 (D.C. Cir. 2002) (“As a federal agency, FERC is a ‘creature of statute,’ having no constitutional or common law existence or authority, but *only* those authorities conferred upon it by Congress.” (quoting *Michigan v. EPA*, 268 F.3d 1075, 1081 (D.C. Cir. 2001))).

³² 16 U.S.C. § 824(b)(1) (2012).

³³ 16 U.S.C. § 824(d) (2012).

³⁴ 16 U.S.C. § 824(b)(1) (2012) (emphasis added).

³⁵ 16 U.S.C. § 824(d) (2012). The Supreme Court recently clarified that FERC's jurisdiction under the “affecting” clause is limited to rules and regulations that directly affect wholesale rates. *FERC v. Elec. Power Supply Ass'n*, 136 S. Ct. 760, 774 (2016).

³⁶ 16 U.S.C. § 824(e) (2012).

³⁷ See Order No. 888, Promoting Wholesale Competition Through Open Access Non-Discriminatory Transmission Services by Public Utilities; Recovery of Stranded Costs by Public Utilities and Transmitting Utilities, 75 FERC ¶ 61,080, at 279 (1996) (“[A]n ISO will be a public utility subject to our jurisdiction....”); *id.* at 279 n.425 (“An ISO will operate facilities used for the transmission of electric energy in interstate commerce and thus will be subject to Open Access and OASIS rules.”); Order No. 741: Credit Reforms in Organized Wholesale Markets, 133 FERC ¶ 61,060, at P 1 n.1 (“As public utilities, [the ISOs and RTOs, including CAISO] have on file as jurisdictional tariffs the rules governing [electric energy and financial transmission rights] markets.”).

³⁸ *Pacific Gas & Elec. Co.*, 77 FERC ¶ 61,204, at 61,796 (1996) (“As proposed, the ISO would be a non-profit, public benefit California corporation, subject to the Commission's jurisdiction.”); *id.* at 61,818 (noting that “the governance or operations of the ISO, or appellate review of ISO Board decisions, ... are [matters] within our exclusive jurisdiction”).

transmission facilities, it also has jurisdiction over transmission owners in the West, including those that are not members of an organized wholesale electricity market.³⁹

b. Powers Reserved to the States

The FPA also imposes limits on FERC jurisdiction, noting that federal regulation will “extend only to those matters which are not subject to regulation by the States.”⁴⁰ The FPA also notes that FERC does *not* have authority “over facilities used for the generation of electric energy or over facilities used in local distribution or only for the transmission of electric energy in intrastate commerce, or over facilities for the transmission of electric energy consumed wholly by the transmitter.”⁴¹ The FPA allows states to retain control over the “[n]eed for new power facilities, their economic feasibility, and [retail] rates and services.”⁴² Indeed, FERC itself has said that it “acknowledge[s] California’s ability under its authorities over the electric utilities subject to its jurisdiction to favor particular generation technologies over others. We respect the fact that resource planning and resource decisions are the prerogative of state commissions and that states may wish to diversify their generation mix to meet environmental goals in a variety of ways.”⁴³

Clean energy policies that target the state’s generation mix and retail electricity rates are thus valid exercises of state power. It is important to note that California and other states retain these powers over generation, local distribution, and retail rates regardless of any changes to the geographic footprint of the CAISO.

The Supreme Court’s recent decisions policing the boundary between state and federal jurisdiction under the Federal Power Act have “recognize[d] the importance of protecting the States’ ability to contribute, within their regulatory domain, to the Federal Power Act’s goal of ensuring a sustainable supply of efficient and price-effective energy.”⁴⁴ The Court’s 2015 opinion in *FERC v. Electric Power Supply Association* emphasized that “the law places beyond FERC’s power, and leaves to the States alone, the regulation of ‘any other sale’—most notably, any retail sale—of electricity.”⁴⁵ The majority opinion in *Hughes v. Talen Energy Marketing, LLC* similarly acknowledged that states retain authority over generation resources.⁴⁶

³⁹ See, e.g., *Ariz. Pub. Serv. Co.*, 155 FERC ¶ 61,257 (2016); *Puget Sound Energy, Inc.*, 135 FERC ¶ 61,254 (2011).

⁴⁰ 16 U.S.C. § 824(a).

⁴¹ 16 U.S.C. § 824(b)(1).

⁴² *Pacific Gas & Elec Co. v. State Energy Res. Conservation & Dev. Comm’n*, 461 U.S. 190, 205 (1983).

⁴³ *S. Cal. Edison Co.*, 70 FERC ¶ 61,215, at 61,676 (1995).

⁴⁴ *Hughes v. Talen Energy Mktg., LLC*, 136 S. Ct. 1288, 1300 (2016) (Sotomayor, J., concurring).

⁴⁵ *FERC v. Elec. Power Supply Ass’n*, 136 S. Ct. 760, 766 (2015).

⁴⁶ *Hughes v. Talen Energy Mktg., LLC*, 136 S. Ct. 1288, 1292 (2016) (citing *Pac. Gas & Elec. Co. v. State Energy Res. Conservation & Dev. Comm’n*, 461 U.S. 190, 205 (1983) for the proposition that “[n]eed for new power facilities, their economic feasibility, and rates and services, are areas that have been characteristically governed by the States.”).

The preemption issues raised by the divide between state and federal jurisdiction are discussed in further detail in Part II.C.2.

c. Defining Electricity “in Interstate Commerce”

As discussed in Part II.C.1.a, FERC has jurisdiction over transmission and wholesale sales of electricity “in interstate commerce.” FERC and the courts have clarified that wholesale electricity transactions can qualify as sales “in interstate commerce” even if the buyer and seller are located in the same state. The FPA says that “electric energy shall be held to be transmitted in interstate commerce if transmitted from a State and consumed at any point outside thereof.”⁴⁷ However, “this provision has been consistently interpreted to mean that the Commission has jurisdiction when the system is interconnected and capable of transmitting energy across the State boundary, even though the contracting parties and the electrical [transmission] pathway between them are within one State.”⁴⁸ The reason is simple: the electrical current flowing through the regional network of wires and substations ignores state boundaries.

⁴⁷ 16 U.S.C. § 824(c).

⁴⁸ Fla. Power & Light Co., 29 FERC ¶ 61,140, at 61,291 (1984) (citing Fed. Power Comm’n v. S. Cal. Edison Co., 376 U.S. 205 (1964) and Fed. Power Comm’n v. Fla. Power & Light Co., 404 U.S. 453 (1972)). See also People’s Elec. Coop., 84 FERC ¶ 61,229, at 62,107-62,112 (1998), *reh’g denied* 93 FERC ¶ 61,218 (2000) (discussing Jersey Cent. Power & Light Co., 319 U.S. 61 (1943); Fed. Power Comm’n v. Fla. Power & Light Co., 324 U.S. 515 (1945); Conn. Light & Power Co. v. Fed. Power Comm’n, 324 U.S. 515 (1945); Fed. Power Comm’n v. S. Cal. Edison Co., 376 U.S. 205 (1964); and City of Centralia v. FERC, 661 F.2d 787 (9th Cir. 1981)); Wis. Elec. Power Co., 62 FERC ¶ 61,142, at 62,008 n.40 (1993); *reh’g denied* 66 FERC ¶ 61,096 (1994) (“[E]nergy is deemed to be transmitted in interstate commerce if it is transmitted on a portion of an integrated interstate electric system, regardless of whether the transmission is across a state line.”); Promoting Wholesale Competition Through Open-Access Non-Discriminatory Transmission Services by Public Utilities and Transmitting Utilities, Order No. 888, 61 Fed. Reg. 21,540, at 21,725 (May 10, 1996), *order on reh’g*, Order No. 888-A, FERC Stats. & Regs. ¶ 31,048 (1997), *aff’d in relevant part* 225 F.3d 667, 690-95 (D.C. Cir. 2000), *aff’d in relevant part* 535 U.S. 1 (2002) (“Unlike the narrow interpretations given to the FPA provisions reserving certain regulatory authority to the States, the courts have construed transmission ‘in interstate commerce’ broadly. The term does not turn on whether the contract path for a particular power or transmission sale crosses state lines, but rather follows the physical flow of electricity. Because of the highly integrated nature of the electric system, this results in most transmission of electric energy being ‘in interstate commerce.’” (citations omitted)).

Figure 2 - North American Electric Reliability Corporation Interconnections⁴⁹

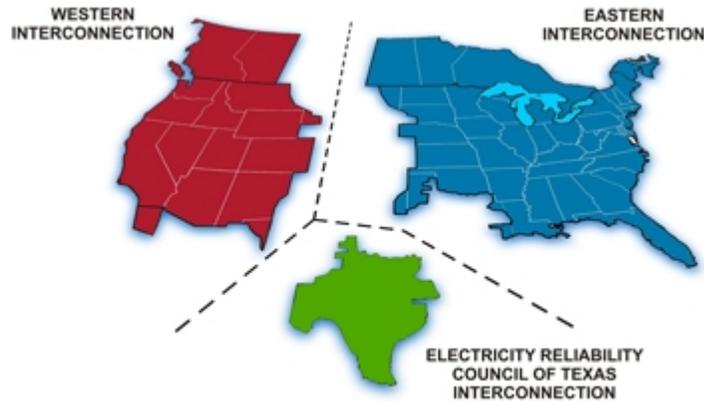


Figure 2. This map shows the three of the major synchronized Interconnections in the North American Electric Reliability Corporation: (1) the Western Interconnection, which includes CAISO, (2) the Eastern Interconnection, and (3) the Electric Reliability Council of Texas Interconnection. The Quebec Interconnection and the Alaska Interconnection are not pictured.

Because California’s electric grid is connected to other states in the Western Interconnection (as shown in Figure 2), FERC has jurisdiction over wholesale sales executed through the CAISO, even when both the buyer and seller are located in California. In its order approving the creation of the CAISO and the California Power Exchange, FERC acknowledged that “the sale of electric energy for resale through the [Power Exchange] will be subject to this Commission’s jurisdiction.”⁵⁰ Similarly, in an order regarding transactions that were part of the 2000-2001 California electricity crisis, FERC noted, “As all of the electric energy sales into the FERC-regulated [California Power Exchange] or ISO spot markets are wholesale sales of electricity in interstate commerce, they all fall within the Commission’s subject matter jurisdiction.”⁵¹

In 2002, the U.S. Supreme Court confirmed this understanding of FERC’s jurisdiction:

“[U]nlike the local power networks of the past, electricity is now delivered over three major networks, or ‘grids,’ in the continental United States. Two of these grids—the ‘Eastern Interconnect’ and the ‘Western Interconnect’—are connected to each other. It is only in Hawaii and Alaska and on the ‘Texas Interconnect’—which covers most of that State—that electricity is distributed entirely within a single State. In the rest of the country, any electricity that enters the grid immediately becomes a part of a vast pool of energy that is constantly moving in interstate commerce.”⁵²

⁴⁹ *Recovery Act Interconnection Transmission Planning*, U.S. Dep’t Energy, <https://energy.gov/oe/services/electricity-policy-coordination-and-implementation/transmission-planning/recovery-act>.

⁵⁰ *Pacific Gas & Elec. Co.*, 77 FERC ¶ 61,204, at 61,795 (1996).

⁵¹ *San Diego Gas & Electric Co.*, 97 FERC ¶ 61,275, at 24 (2001).

⁵² *New York v. FERC*, 535 U.S. 1, 7 (2002) (citing *Fla. Power & Light Co.*, 37 F.P.C. 544, 549 (1967) and *Fed. Power Comm’n v. Fla. Power & Light Co.*, 404 U.S. 453, 469 (1972)).

Both the CAISO and the New York Independent System Operator (NYISO) operate markets with footprints that are largely limited to a single state. FERC exercises its authority over rates set by CAISO and NYISO markets and the rules that affect such rates exactly to the same degree as it exercises its authority over larger, multi-state ISOs.⁵³ FERC can exercise this authority because the CAISO is part of the Western Interconnection and NYISO is part of the Eastern Interconnection. By contrast, FERC does *not* have jurisdiction under the FPA over the Electric Reliability Council of Texas because it is not synchronously connected to the electric grid in other states, as shown in Figure 2.⁵⁴ The dispositive factor in determining FERC jurisdiction therefore is not whether the grid operator's footprint is largely confined to a single state but rather whether the grid managed by the ISO is connected to one of the two multi-state synchronized Interconnections. As long as the electric grid in California is part of the Western Interconnection, transmission and sales of wholesale electricity in the state will be subject to FERC jurisdiction.

While recent technology advances and restructuring of the electricity industry have challenged the traditional "bright line"⁵⁵ between state and federal jurisdiction,⁵⁶ this basic understanding of the meaning of sales of electricity "in interstate commerce" has not changed. **Since California's electricity grid is part of the Western Interconnection, transactions through CAISO-administered markets are currently subject to FERC jurisdiction and will continue to be subject to such jurisdiction, regardless of whether the ISO becomes a regional grid operator.**

2. Preemption Issues

The U.S. Constitution's Supremacy Clause states that federal law "shall be the supreme Law of the Land."⁵⁷ This means that state laws can be "preempted" if they conflict with a federal law. Express preemption occurs when a federal law specifically states that it overrides state law. Implied preemption can occur through "field preemption," when the federal government has fully

⁵³ See, e.g., Cal. Indep. Sys. Operator Corp., 154 FERC ¶ 61,122, at P 17 (2016) ("[W]e remind CAISO that rates for jurisdictional service must be included in CAISO's filed tariff, as required by the tariff, as required by the Federal Power Act and Commission regulations."); *FERC Orders*, Cal. Indep. Sys. Operator, <https://www.caiso.com/rules/Pages/Regulatory/RegulatoryFilingsAndOrders.aspx> (showing FERC orders in recent years regarding CAISO rates and rules); *eTariff Viewer*, NYISO, http://www.nyiso.com/public/markets_operations/documents/tariffviewer/index.jsp (showing FERC orders in recent years regarding NYISO rates and rules).

⁵⁴ See, e.g., Sharyland Utilities, L.P., 121 FERC ¶ 61,006, at 7 (2007); see also Jared M. Fleisher, *ERCOT's Jurisdictional Status: A Legal History and Contemporary Appraisal*, 3 Tex. J. Oil Gas & Energy L. 4 (2008).

⁵⁵ Fed. Power Comm'n v. S. Cal. Edison Co., 376 U.S. 205, 215-16 (1964).

⁵⁶ See *New York v. FERC*, 535 U.S. 1, 16 (2002) ("[T]he landscape of the electric industry has changed since the enactment of the FPA, when the electricity universe was neatly divided into spheres of retail versus wholesale sales.").

⁵⁷ U.S. Const. art. IV, para 2.

occupied the regulatory field, effectively leaving no room for concurrent state jurisdiction,⁵⁸ or through “conflict preemption,” when it is impossible to comply with both the state and federal laws or when the state law impedes the federal objective.⁵⁹ Given the states’ rights concerns implicated in preemption cases, courts have held that a presumption against preemption exists in a “field which the States have traditionally occupied . . . unless [preemption] was the clear and manifest purpose of Congress.”⁶⁰

In the electricity context, parties seeking to challenge state clean energy laws might argue that such laws are preempted by the Federal Power Act or other federal laws relating to electricity or pollution, such as the Public Utility Regulatory Policies Act of 1978 (PURPA) and the Clean Air Act. As discussed above in Part II.C.1, the FPA gives FERC jurisdiction over wholesale sales and transmission of electricity in interstate commerce but preserves state jurisdiction over retail rates and local generation and distribution facilities. The traditional view was that the FPA created a “bright line” between state and federal jurisdiction,⁶¹ with FERC exerting exclusive control over wholesale transactions.⁶² FERC’s exclusive jurisdiction over wholesale rates can impose limits on the power of state regulators through the “filed rate doctrine.” Under this doctrine, states cannot set retail rates at levels that fail to give effect to wholesale rates that FERC has deemed just and reasonable because “a State may not conclude in setting retail rates that the FERC-approved wholesale rates are unreasonable.”⁶³

Restructuring of the electricity industry and recent technological advances involving distributed generation and demand response have challenged the traditional jurisdictional line between wholesale and retail electricity. Federal courts have addressed a number of novel preemption questions in recent years, including issues related to sales of electricity to power plants for “station power,”⁶⁴ regional transmission planning,⁶⁵ the treatment of demand response resources in wholesale markets,⁶⁶ and the relationship between state subsidies for new generation and wholesale capacity markets.⁶⁷

These decisions shed light on how courts assess preemption challenges. Perhaps the clearest articulation of modern energy law preemption analysis comes from the Supreme Court’s 2015 decision in *Oneok v. Learjet*, which emphasizes “the importance of considering the *target* at

⁵⁸ See *English v. General Elec. Co.*, 496 U.S. 72, 90 (1990).

⁵⁹ See *id.* at 79.

⁶⁰ *Rice v. Santa Fe Elevator Corp.*, 331 U.S. 218, 230 (1947); see also *Wyeth v. Levine*, 555 U.S. 555, 565 (2009); *New York v. FERC*, 525 U.S. 1, 17-18 (2002); *Medtronic, Inc. v. Lohr*, 518 U.S. 470, 485 (1996); *N.Y. State Conference of Blue Cross & Blue Shield Plans v. Travelers Ins. Co.*, 514 U.S. 645, 655 (1995).

⁶¹ *Fed. Power Comm’n v. S. Cal. Edison Co.*, 376 U.S. 205, 215-16 (1964).

⁶² See *Nantahala Power & Light Co. v. Thornburg*, 476 U.S. 953, 966 (1986); 16 U.S.C. §§ 824(a)-(b) (2012); *id.* § 824e(a).

⁶³ *Nantahala Power & Light Co. v. Thornburg*, 476 U.S. 953, 966 (1986).

⁶⁴ *S. Cal. Edison Co. v. FERC*, 603 F.3d 996 (D.C. Cir. 2010).

⁶⁵ *S.C. Pub. Serv. Auth. v. FERC*, 762 F.3d 41 (D.C. Cir. 2014).

⁶⁶ *FERC v. Elec. Power Supply Ass’n*, 136 S. Ct. 760 (2016).

⁶⁷ *Hughes v. Talen Energy Mktg., LLC*, 136 S. Ct. 1288 (2016).

which the state law *aims* in determining whether that law is preempted.”⁶⁸ State laws that target retail rates are valid, while those that target wholesale rates are preempted. The most recent Supreme Court preemption decision in the electricity context, *Hughes v. Talen Energy Marketing*, determined that a state program requiring utilities to enter into a contract for differences with a new gas-fired power plant was preempted because it displaced the FERC-approved rate that the plant would receive in the wholesale capacity market.⁶⁹ However, the Court’s decision emphasized that it was “limited” to the specific contractual arrangement at issue in the case and did “not address the permissibility of various other measures States might employ to encourage development of new or clean generation.”⁷⁰

While several recent legal challenges have argued that state clean energy policies are preempted by the Federal Power Act, few have been successful. In *North Dakota v. Heydinger*, the Eighth Circuit struck down a state policy limiting high-carbon electricity imports, but the panel was divided in terms of its reasoning, which weakens the decision’s precedential effect.⁷¹ One judge argued that the law was preempted by the Federal Power Act while another believed it was preempted by the Clean Air Act. The third agreed with the district court that the law was invalid because it violated the dormant Commerce Clause rather than the Supremacy Clause. In another case, a federal district court struck down a Massachusetts regulation regarding the definition of “avoided costs” under PURPA as inconsistent with the federal statute,⁷² although an appeal is currently pending before the First Circuit.⁷³ Other courts have rejected or expressed skepticism about Supremacy Clause challenges to state clean energy policies. A federal district court in August 2016 dismissed a complaint that claimed that Connecticut’s clean energy procurement program was preempted by PURPA⁷⁴ (an appeal is currently pending before the Second Circuit⁷⁵). Courts have also rejected preemption claims against low-carbon fuel standards⁷⁶ and expressed skepticism regarding a claim that a state’s approval of a contract for wind power was preempted by the Federal Power Act.⁷⁷

⁶⁸ 135 S. Ct. 1591, 1599 (2015). Although *Oneok* arose under the Natural Gas Act, it provides insight for preemption under the Federal Power Act because courts have held that the relevant provisions of the Natural Gas Act and FPA are “in all material respects substantially identical.” *Ark. La. Gas Co. v. Hall*, 453 U.S. 571, 578 n.7 (1981).

⁶⁹ 136 S. Ct. 1288 (2016).

⁷⁰ *Id.* at 1299.

⁷¹ *North Dakota v. Heydinger*, 825 F.3d 912 (8th Cir. 2016). For further discussion of this case, see Part III.A.2.c.

⁷² *Allco Renewable Energy Ltd. v. Mass. Elec. Co.*, No. 15-13515-PBS, 2016 WL 5346937 (D. Mass. Sept. 23, 2016).

⁷³ *Allco Renewable Energy Ltd. v. Mass Elec. Co.*, No. 17-1296 (1st Cir. Mar. 29, 2017) (notice of appeal filed).

⁷⁴ *Allco Fin. Ltd. v. Klee*, No. 3:15-cv-00608-CSH, 2016 WL 4414774 (D. Conn. Aug. 18, 2016).

⁷⁵ *Allco Fin. Ltd. v. Klee*, No. 16-2946 (2d Cir. Sept. 28, 2016) (appeal brief filed).

⁷⁶ *Rocky Mountain Farmers Union v. Corey*, 730 F.3d 1070 (9th Cir. 2013); *Am. Fuel & Petrochemical Mfrs. v. O’Keeffe*, 134 F. Supp. 3d 1270 (D. Ore. 2015), *appeal pending* No. 15-35834 (9th Cir. Feb. 3, 2016) (appellant brief filed).

⁷⁷ *Town of Barnstable v. Berwick*, 17 F. Supp. 3d 113, 124 n.26 (D. Mass. 2014). The district court dismissed the case on Eleventh Amendment sovereign immunity grounds. The First Circuit rejected the Eleventh Amendment ruling and remanded the case to the district court. *Town of Barnstable v. O’Connor*,

3. Dormant Commerce Clause Issues

The dormant Commerce Clause presents another important restraint on state regulations. The Commerce Clause of the U.S. Constitution says that Congress shall have the power “To regulate Commerce with foreign Nations, and among the several States, and with the Indian Tribes.”⁷⁸ The Commerce Clause has been read to include a “‘dormant’ limitation on the authority of States to enact legislation affecting interstate commerce.”⁷⁹

There are three major tests that courts use to determine whether a state law violates the dormant Commerce Clause: (1) strict scrutiny for laws that discriminate against out-of-state commerce, (2) the *Pike* balancing test for facially neutral laws, and (3) the extraterritoriality test. The Supreme Court has said that state laws that discriminate against interstate commerce are “virtually *per se* invalid”⁸⁰ and will be struck down unless they “advance[] a legitimate local purpose that cannot be adequately served by reasonable nondiscriminatory alternatives.”⁸¹ In *Pike v. Bruce Church*, the Supreme Court established the less stringent test for laws that are not facially discriminatory. Such laws “will be upheld unless the burden imposed on [interstate] commerce is clearly excessive in relation to the putative local benefits.”⁸² Finally, the dormant Commerce Clause also imposes limits on state laws that have an “extraterritorial effect.” The Supreme Court has held that the “Commerce Clause ... precludes the application of a state statute to commerce that takes place wholly outside of the State’s borders, whether or not the commerce has effects within the State.”⁸³

California’s clean energy laws could be challenged as unconstitutional under any of these three tests. One key focus of all three tests is the state law’s impact on interstate commerce. As discussed in Part II.C.1.c, transmission and sales of wholesale electricity in California are already considered part of interstate commerce by virtue of the fact that California is part of the Western Interconnection. Additionally, the scope of “interstate commerce” is even broader in the Commerce Clause context than it is in the context of determining FERC’s jurisdiction under the Federal Power Act.⁸⁴ **There is therefore no question that a California law that impacts**

786 F.3d 130 (1st Cir. 2015). The contract at issue was terminated before the district court reached a decision on remand. *Town of Barnstable v. O’Connor*, No. 14-cv-10148 (D. Mass. July 1, 2015) (joint status report filed).

⁷⁸ U.S. Const. art. I, § 8, cl. 3.

⁷⁹ *Healy v. Beer Inst.*, 491 U.S. 324, 326 n.1 (1989).

⁸⁰ *Ore. Waste Sys., Inc. v. Dep’t of Env’tl. Quality of Ore.*, 511 U.S. 93, 99 (1994).

⁸¹ *Id.* at 101.

⁸² *Pike v. Bruce Church, Inc.*, 397 U.S. 137, 142 (1970).

⁸³ *Edgar v. MITE Corp.*, 457 U.S. 624, 642-43 (1982).

⁸⁴ See Jared M. Fleisher, *ERCOT’s Jurisdictional Status: A Legal History and Contemporary Appraisal*, 3 *Tex. J. Oil Gas & Energy L.* 4 (2008) (“[I]t is important to pause for a moment on the fact that interstate commerce in this context is a statutory term and does not refer to the Interstate Commerce Clause of the United States Constitution. . . . [I]t is essential to remain aware that ERCOT’s jurisdictional status is a product of the FPA’s regulatory scheme and almost certainly represents an under-reach in terms of the Commerce Clause power.”); Cassandra Burke Robertson, *Bringing the Camel into the Tent: State and Federal Power over Electricity Transmission*, 49 *Clev. St. L. Rev.* 71, 78 (2001) (“There is little doubt that

wholesale electricity transactions already affects interstate commerce and is thus already subject to the limitations of the dormant Commerce Clause. This is true regardless of whether or not CAISO becomes a regional ISO.

There is one additional point regarding the extraterritoriality test that is important to the interests of California and other Western states. In assessing claims about whether a state law is extraterritorial, courts focus on “whether the practical effect of the regulation is to control conduct beyond the boundaries of the State.”⁸⁵ There has been some confusion in different judicial circuits about the meaning of the extraterritoriality doctrine.⁸⁶ The Ninth Circuit—which covers California as well as Alaska, Arizona, Hawaii, Idaho, Montana, Nevada, Oregon, and Washington—has taken a narrow view, holding that this extraterritoriality limit only applies when a statute sets the price of a product or “[t]he price of its in-state products to out-of-state prices.”⁸⁷ The Tenth Circuit, which covers most of the rest of the West, has taken the same position.⁸⁸ However, other circuits have taken a broader approach, holding that the extraterritoriality doctrine is not limited to the price-control context.⁸⁹ The fact that the Ninth and Tenth Circuits take a narrow view is advantageous for California and other Western states since potential dormant Commerce Clause challenges that hinge on the extraterritoriality theory are likely to be subject to this stricter test.

In recent years, several parties have challenged state clean energy policies as violating the dormant Commerce Clause.⁹⁰ However, with the exception of *North Dakota v. Heydinger*,⁹¹ none of these challenges have been successful in the federal courts.⁹² In *Energy & Environment Legal Institute v. Epel*, the Tenth Circuit (in an opinion by then-Judge Neil Gorsuch) upheld Colorado’s renewable portfolio standard, rejecting the claim that it amounted to extraterritorial legislation because “it isn’t a price control statute, it doesn’t link prices paid in Colorado with those paid out of state, and it does not discriminate against out-of-staters.”⁹³ Similarly, a federal

transmission of electricity could meet the Commerce Clause definition of interstate commerce There is also little doubt that electricity transmission—even that within a single state—“substantially [a]ffects” interstate commerce. . . . Furthermore, the interconnected grid could even be seen as an instrumentality of interstate commerce, for electricity travels through the grid to get from one state to another”).

⁸⁵ *Healy v. Beer Inst.*, 491 U.S. 324, 336 (1989).

⁸⁶ Jeffrey M. Schmitt, *Making Sense of Extraterritoriality: Why California’s Progressive Global Warming and Animal Welfare Legislation Does Not Violate the Dormant Commerce Clause*, 39 Harv. Envt. L. Rev. 423 (2015).

⁸⁷ *Association des Eleveurs de Canards et D’oies du Quebec v. Harris*, 729 F.3d 937, 951 (9th Cir. 2013) (quoting *Pharm. Research & Mfrs. of Am. v. Walsh*, 538 U.S. 644, 669 (2003))

⁸⁸ *Energy & Envt. Legal Inst. v. Epel*, 793 F.3d 1169, 1175 (10th Cir. 2015).

⁸⁹ See, e.g., *North Dakota v. Heydinger*, 825 F.3d 912, 920 (8th Cir. 2016).

⁹⁰ See *State Cases*, State Power Project, <https://statepowerproject.org/states/>.

⁹¹ *North Dakota v. Heydinger*, 825 F.3d 912 (8th Cir. 2016). As noted above, only one of the three judges on the *Heydinger* panel believed that the law violated the Commerce Clause’s extraterritoriality doctrine.

⁹² See *State Cases*, State Power Project, <https://statepowerproject.org/states/>.

⁹³ *Energy & Envt. L. Inst. v. Epel*, 793 F.3d 1169, 1173 (10th Cir. 2015). While only the extraterritoriality challenge was preserved on appeal, the lower court also rejected plaintiff’s claims that the RPS discriminated against out-of-state commerce or amounted to an excessive burden on interstate commerce under the *Pike* test. *Id.* at 1172.

district court recently dismissed a challenge to Connecticut's RPS, which requires renewable energy to be generated in New England or an adjacent region in order to be eligible to receive Renewable Energy Certificates (RECs). The court held:

“[T]he dormant Commerce Clause does not apply to Connecticut because the RPS creates a market for RECs, rather than impeding on a previously existing national market. Furthermore, Connecticut is not obligated to pass the benefits of its subsidy program without restriction to those producing clean energy in [remote states].”⁹⁴

4. Summary of Key Legal Principles

The Federal Power Act gives FERC jurisdiction over transmission and wholesale sales of electricity “in interstate commerce.”⁹⁵ The term “in interstate commerce” has been interpreted to include transactions that source and sink within a single state so long as that state is part of one of the two large multi-state interconnections (the Eastern Interconnection and the Western Interconnection).⁹⁶ Transmission and wholesale sales of electricity in California are already subject to FERC jurisdiction under the Federal Power Act because California is part of the Western Interconnection. **The potential for legal challenges claiming that a California law conflicts with and is thus preempted by the Federal Power Act (or another federal law) will not change if CAISO becomes a regional ISO.**

If California or other states' laws face preemption challenges under the Supremacy Clause, it is important to bear in mind that states retain significant power under the Federal Power Act, including authority over generation, local distribution, and retail rates.⁹⁷ This statutory reservation of state power gives California and other Western states considerable leeway to defend their clean energy policies. The Supreme Court's recent decision in *Hughes v. Talen Energy Marketing*—in which it held that a state-mandated generation contract was preempted by the Federal Power Act—has made Supremacy Clause issues more salient. However, it is important to recall that the Court emphasized that its decision was “limited” to the specific contractual arrangement at issue in the case and did “not address the permissibility of various other measures States might employ to encourage development of new or clean generation.”⁹⁸

California's clean energy laws could also face challenges under the dormant Commerce Clause. Each of the three dormant Commerce Clause tests—strict scrutiny for discriminatory laws, the *Pike* balancing test for facially neutral laws, and the extraterritoriality test—focus on the effect of a state law on interstate commerce. **Because transmission and wholesale sales of electricity in California are already considered to be part of interstate commerce, the risk**

⁹⁴ Allco Fin. Ltd. v. Klee, No. 3:15-cv-608, 2016 WL 4414774, at *25 (Aug. 18, 2016) (appeal pending).

⁹⁵ 16 U.S.C. § 824(b)(1) (2012).

⁹⁶ New York v. FERC, 535 U.S. 1, 7 (2002) (citing Fla. Power & Light Co., 37 F.P.C. 544, 549 (1967) and Fed. Power Comm'n v. Fla. Power & Light Co., 404 U.S. 453, 469 (1972)).

⁹⁷ 16 U.S.C. § 824(b)(1) (2012); Pacific Gas & Elec Co. v. State Energy Res. Conservation & Dev. Comm'n, 461 U.S. 190, 205 (1983).

⁹⁸ 136 S. Ct. 1288, 1299 (2016).

of a dormant Commerce Clause challenge to California’s clean energy policies does not change based on whether or not CAISO becomes a regional ISO.

III. Impact of the Shift to a Regional ISO

A. California’s Clean Energy Policies

California is leading the nation in enacting and implementing public policies to address climate change by reducing greenhouse gas emissions and transitioning from fossil fuels to clean energy to generate electricity. In evaluating the emergence of an integrated regional Western electricity market, this paper examines the potential policy and legal ramifications for three major California clean energy policies: the renewable portfolio standard (RPS), the greenhouse gas emission performance standard (EPS), and the cap-and-trade program under the Global Warming Solutions Act (GWSA).

1. Renewable Portfolio Standard

a. Existing Policy

The California RPS mandates that a minimum percentage of electricity served to California customers is procured from qualifying renewable sources⁹⁹ by retailer sellers.¹⁰⁰ The standard applies to all publicly owned utilities (POUs), investor-owned utilities (IOUs), electricity service providers, and community choice aggregators. The California standard is one of the nation’s most ambitious, with a 50% target by 2030. In 2015, the major California IOUs reported that they met 27.6% of their collective electricity demand with RPS-eligible renewable generation.¹⁰¹ California State Senate leader Kevin De-León has since proposed legislation to require that 100% of California electricity be renewable by 2045. The bill, S.B. 584, also advances the 50% RPS goal from 2030 to 2025.¹⁰²

The California RPS was established in 2002 under S.B. 1078. In October 2015, S.B. 350 (“Clean Energy and Pollution Reduction Act”) established new greenhouse gas reduction goals for 2030 and beyond. S.B. 350 created a 50% RPS goal for 2030 and enhanced the state’s ability to meet its long-term, economy-wide 80% greenhouse gas reduction from 1990 levels by

⁹⁹ The eligible renewable energy technologies do not include most hydroelectric facilities that exceed 30 MW in size.

¹⁰⁰ S.B. 1078 (2002).

¹⁰¹ *Renewables Portfolio Standard Quarterly Report: Fourth Quarter 2016*, Cal. Pub. Utils. Comm’n, http://cpuc.ca.gov/uploadedFiles/CPUC_Website/Content/Utilities_and_Industries/Energy/Reports_and_White_Papers/Q4_2016_RPS_Report_to_the_Legislature_FINAL.pdf

¹⁰² *SB-584 California Renewables Portfolio Standard Program*. February 17, 2017. California Legislature. https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201720180SB584

2050.¹⁰³ The RPS has consistently progressed during the past decade and sets interim targets along the way to the final goal:

- 20% by end of 2013
- 25% by end of 2016
- 33% by end of 2020
- 40% by end of 2024
- 45% by end of 2027
- 50% by end of 2030

The California Energy Commission (CEC), the California Public Utilities Commission (CPUC), and the California Air Resources Board (CARB) share responsibility for implementing the RPS. The CEC is responsible for certifying renewable facilities,¹⁰⁴ running a tracking and verification system, and monitoring compliance by publicly owned utilities.¹⁰⁵ The CEC refers non-compliant publicly owned utilities to CARB for potential penalties.¹⁰⁶ Meanwhile, the CPUC is responsible for overseeing RPS compliance by investor-owned utilities, electric service providers, and community choice aggregators.¹⁰⁷

WECC, which oversees one of the three primary interconnects in the United States, falls under the authority of the North American Electric Reliability Corporation (NERC) and encompasses the entire Western Interconnection. Among other responsibilities, WECC is tasked with maintaining a reliable power system that supports competitive markets, ensuring open transmission line access, and assisting in regional transmission planning. Resources located outside of California must either “have a first point of interconnection to a California Balancing Authority” or be connected to WECC and certify that they do “not cause or contribute to any violations of a California environmental quality laws, ordinances, regulations, or standards (LORS) within California.”¹⁰⁸

¹⁰³ *Clean Energy & Pollution Reduction Act: SB 350 Overview*, Cal. Energy Comm’n, <http://www.energy.ca.gov/sb350/>.

¹⁰⁴ In order to be certified as a renewable resource for the purposes of California’s RPS, facilities must be registered and approved by the Western Renewable Energy Generation Information System, a system that was developed by the Western Electricity Coordinating Council (WECC), the CEC, and the Western Governors’ Association. *Renewables Portfolio Standard Eligibility: Ninth Edition, Commission Guidebook*, Cal. Energy Comm’n 24 (Jan. 2017), http://docketpublic.energy.ca.gov/PublicDocuments/16-RPS-01/TN215573_2011f

70125T160830_Renewables_Portfolio_Standard_Eligibility_Guidebook_Ninth_Editi.pdf; *Renewables Portfolio Standard*, DSIRE (Oct. 7, 2015), <http://programs.dsireusa.org/system/program/detail/840>.

¹⁰⁵ *Renewable Portfolio Standard (RPS)*, Cal. Energy Comm’n, <http://www.energy.ca.gov/portfolio/>.

¹⁰⁶ *Id.*

¹⁰⁷ *California Renewables Portfolio Standard (RPS)*, Cal. Pub. Utils. Comm’n, http://www.cpuc.ca.gov/RPS_Homepage/.

¹⁰⁸ *Renewables Portfolio Standard Eligibility: Ninth Edition, Commission Guidebook*, Cal. Energy Comm’n 33 (Jan. 2017), http://docketpublic.energy.ca.gov/PublicDocuments/16-RPS-01/TN215573_20170125T160830_Renewables_Portfolio_Standard_Eligibility_Guidebook_Ninth_Editi.pdf.

f. Resources not connected to a California BA must also meet certain recency requirements in terms of start of commercial operations, procurement by a California load-serving entity, expansion, or repowering. *Id.*

The state also breaks renewable resources up into three categories (or buckets) and requires that 75% of the RPS target come from renewable energy sources that have a first point of interconnection in a California balancing authority¹⁰⁹ or that are generated in a neighboring balancing authority but are delivered electrically into the California balancing authority.¹¹⁰ State regulators have not yet determined how to handle renewable resources transferred across balancing authorities through CAISO's Energy Imbalance Market.¹¹¹

Renewable energy is procured through requests for offers for utility-scale projects,¹¹² a renewable auction mechanism for resources between 3 MW and 20 MW,¹¹³ and feed-in tariffs for resources under 3 MW.¹¹⁴ Investor-owned utilities are also authorized to own and operate solar photovoltaic projects and to use competitive solicitations to enter into power purchase agreements (PPAs) with independent developers.¹¹⁵

b. Policy Analysis

Enhanced regional integration would allow California to meet its RPS at lower cost by reducing curtailment of in-state renewable energy generation and improving access to high quality renewable energy resources across the Western region. California renewable sources would be exported at peak production times to other Western states, greatly reducing or eliminating curtailment.

CAISO also warns that the risk of grid instability increases due to potential oversupply of renewables at certain times of the day,¹¹⁶ a phenomenon that CAISO predicts will become more striking in the coming years.¹¹⁷ Enhanced regional integration would therefore improve system reliability and environmental performance by pooling demand and generation supply across a

¹⁰⁹ The energy can also count as a category 1 if it is not first interconnected to California but is delivered to California without substituting other energy.

¹¹⁰ *Dynamic Transfers*, PJM, <http://www.pjm.com/about-pjm/member-services/member-forms/dynamic-transfers.aspx>.

¹¹¹ *Renewables Portfolio Standard Eligibility: Ninth Edition, Commission Guidebook*, Cal. Energy Comm'n 3 (Jan. 2017), http://docketpublic.energy.ca.gov/PublicDocuments/16-RPS-01/TN215573_20170125T160830_Renewables_Portfolio_Standard_Eligibility_Guidebook_Ninth_Editi.pdf.

¹¹² *Utility Scale Request for Offers (RFO)*, Cal. Pub. Utils. Comm'n, http://cpuc.ca.gov/Utility_Scale_RFO/.

¹¹³ *Renewable Auction Mechanism*, Cal. Pub. Utils. Comm'n, http://cpuc.ca.gov/Renewable_Auction_Mechanism/.

¹¹⁴ *RPS Procurement Programs*, Cal. Pub. Utils. Comm'n, http://www.cpuc.ca.gov/RPS_Procurement_Programs/.

¹¹⁵ *Id.*

¹¹⁶ *Renewables Integration*, Cal. Indep. Sys. Operator Corp., <http://publications.caiso.com/StateOfTheGrid2014/RenewablesIntegration.htm>.

¹¹⁷ *What the Duck Curve Tells Us About Managing a Green Grid*, Cal. Indep. Sys. Operator Corp. (2016), https://www.caiso.com/Documents/FlexibleResourcesHelpRenewables_FastFacts.pdf.

wider geographic area.¹¹⁸

Enhanced regional integration would introduce California renewable energy generation to a larger demand base by means of a Western day-ahead market and purposefully planned transmission investments. Both would lead to less curtailment of renewables in California. The Union of Concerned Scientists found that curtailment in California reaches 4.8% under a 50% RPS. Under a regional ISO, curtailment can be decreased to .08% through a combination of demand response, electricity storage, and net exports.¹¹⁹ The “net exports” strategy would be best facilitated through a regional market. Combined, these three factors would cause a 10% drop in California’s greenhouse gas emissions, most of which would be driven by utilizing existing renewables in lieu of running natural gas peaker plants.¹²⁰ Without enhanced grid integration, California renewables that are curtailed due to overgeneration at peak solar times may cause new projects that are subsequently developed to be contracted at higher PPA prices in order to compensate for the expected curtailment. These higher prices would be passed on to California utility customers.

The limited geographic size of the CAISO market also restricts access for cheaper out-of-state renewables to serve California load.¹²¹ Western states have ideal landscapes for wind, where wind speeds and capacity factors are among the highest in the country (Figure 3). A capacity factor is equal to the energy output as a percentage of rated capacity at full production. Capacity factors are also one of the primary drivers in determining a PPA’s contract price. Wind projects in these other Western states have lower costs per megawatt-hour (MWh) than do projects in California primarily because of their higher capacity factors. Capacity factors are approximately one third higher in Wyoming than in California’s Imperial Valley and Tehachapi area. As a result, the dollar per MWh levelized cost of energy (LCOE) is approximately 50% lower in Wyoming.¹²² California would have access to less expensive wind energy from other Western states under enhanced Western grid integration, which would lead to lower bills for California utility customers, as outlined in Section III B.

¹¹⁸ Rebecca Johnson, *Grid Integration in the West: Bulk Electric System Reliability, Clean Energy Integration, and Economic Efficiency*, Hewlett Found. (July 19, 2015), <http://americaspowerplan.com/wp-content/uploads/2015/08/Grid-Integration-in-the-West-07-19-15-Updated.pdf>.

¹¹⁹ James H. Nelson & Laura M. Wisland, *Achieving 50 Percent Renewable Electricity in California*, Union Concerned Scientists (Aug. 2015), <http://www.ucsusa.org/sites/default/files/attach/2015/08/Achieving-50-Percent-Renewable-Electricity-In-California.pdf>.

¹²⁰ *Id.*

¹²¹ The term “full production” means operating 100% of the time at its rated capacity.

¹²² *SB 350 Study: The Impacts of a Regional ISO-Operated Power Market on California*, Cal. Indep. Sys. Operator Corp. et al. (July 26, 2016), https://www.aiso.com/Documents/Presentation-SenateBill350Study-Jul26_2016.pdf.

Figure 3 - Wind Resources in the United States¹²³

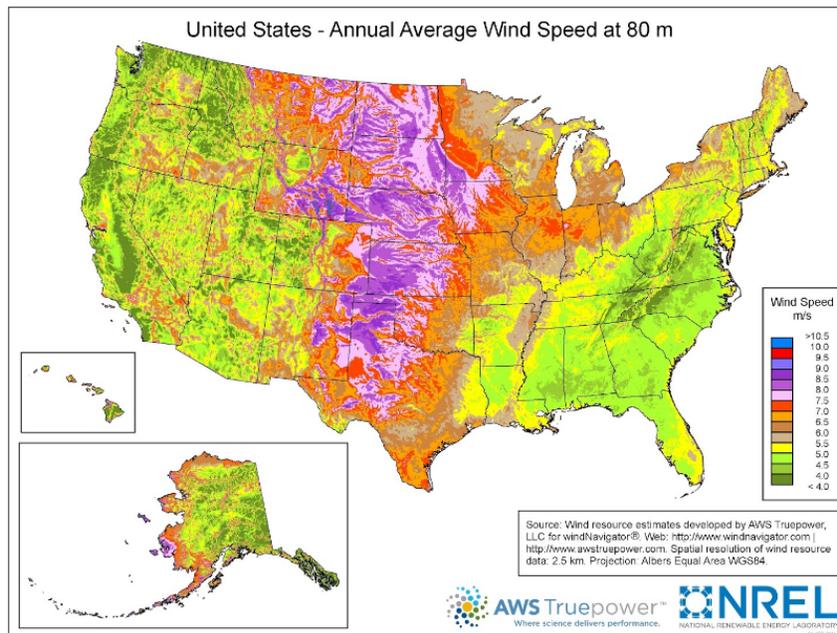


Figure 3. Map of the annual average wind speed at 80 m. Most of the west's strong wind resources are in Montana, Wyoming, and New Mexico.

Developing the highest quality renewable resources across the West would achieve the RPS goals with the lowest costs and least curtailment, while also encouraging developers and utilities to procure cost-effective renewables well in excess of RPS standards. This has already occurred in areas with transparent markets and improved regional transmission planning because of lower “transmission-related renewables integration and generator interconnection costs.”¹²⁴ In the Midwest and Texas, for example, new wind generation beyond RPS requirements has represented between 3% and 6% of total retail sales between 2011 and 2015.¹²⁵ Applying this logic to an integrated Western grid, 3% to 6% of total WECC retail sales would equate to an additional 5,500-11,500 MW of renewable energy capacity development beyond RPS requirements. In fact, RPS goals by one estimate only account for about 60% of total non-hydro renewable energy generation in the United States.¹²⁶

Without improved regional coordination, RPS compliance and the integration of renewables into the CAISO grid will become more challenging and comparatively costlier as the levels of variable energy resources continues to grow. Among the less attractive alternatives are more

¹²³ *United States: Annual Average Wind Speed at 80 m*, Nat'l Renewable Energy Laboratory (Apr. 1, 2011), http://www.nrel.gov/gis/images/80m_wind/USwind300dpe4-11.jpg.

¹²⁴ *SB 350 Study: The Impacts of a Regional ISO-Operated Power Market on California*, Cal. Indep. Sys. Operator Corp. et al. (July 26, 2016), https://www.aiso.com/Documents/Presentation-SenateBill350Study-Jul26_2016.pdf.

¹²⁵ *Id.*

¹²⁶ *SB 350 Study: The Impacts of a Regional ISO-Operated Power Market on California*, Cal. Indep. Sys. Operator Corp. et al. (July 8, 2016), https://www.aiso.com/Documents/SB350Study_AggregatedReport.pdf.

capacity build-out than necessary or over-investment in battery storage. **Enhanced regional grid integration would significantly reduce the need for renewable energy curtailment, which would save California between \$680 million and \$799 million annually in renewable energy procurement costs - even after accounting for additional transmission investment required to transport the renewable electricity.** Investing in excessive battery storage to meet the RPS goals will invariably cost more than transmitting those excess electrons to the expanded regionalized market. In a 55% RPS scenario in 2030, California would need nearly four times more battery storage without enhanced grid integration.¹²⁷ Lithium-ion batteries that would replace peaker power plants were estimated in December 2016 by Lazard to cost between \$285 to \$581 per MW.¹²⁸ While these costs will inevitably decline as battery storage adoption increases and the market matures, this additional investment in storage will lead to higher compliance costs passed on to utility customers. The National Renewable Energy Laboratory (NREL) attempted to analyze the storage challenge by modeling “high PV solar” scenarios to determine the amount of energy storage required to meet high levels of solar. While not a perfectly parallel situation to California’s, this study highlights the challenges in integrating renewables without broader grid integration. Their analysis concludes that up to about 10 GW of new electricity storage is needed to achieve 40% solar PV penetration, an estimate that grows by almost three fold to 28 GW once solar PV reaches 50% of total generation.¹²⁹ The dramatic rise in energy storage build-out, despite a relatively small growth in solar PV penetration, highlights the challenges California faces in meeting its RPS goals. Enhanced grid integration will reduce these storage needs and costs significantly.

The progression of RPS goals—with four legislative updates in the years since the original standard was established in 2002—shows the continued ambition of the California legislature and Governor’s office. As California continues to forge ahead with meeting its AB 32 goals, it can be expected to make more ambitious efforts to reduce GHG emissions. A pillar of those efforts will continue to be the decarbonization of the electricity generation sector, and the RPS goal is likely to be raised - as foreshadowed in S.B. 584. **In order to meet future RPS goals that are more ambitious than the current 50% by 2030 mandate, California needs enhanced Western grid integration.**

c. Legal Analysis

To date, no federal court has struck down a state renewable portfolio standard. Nonetheless, recent litigation suggests that these standards may be the target of dormant Commerce Clause and Supremacy Clause challenges. **The shift to a regional ISO would *not* affect the analysis**

¹²⁷ *SB 350 Study: The Impacts of a Regional ISO-Operated Power Market on California*, Cal. Indep. Sys. Operator Corp. et al. (July 26, 2016), https://www.caiso.com/Documents/Presentation-SenateBill350Study-Jul26_2016.pdf.

¹²⁸ *Lazard’s Levelized Cost of Storage: Version 2.0*, Lazard (Dec. 2016), <https://www.lazard.com/media/438042/lazard-levelized-cost-of-storage-v20.pdf>.

¹²⁹ Paul Denholm & Robert Margolis, *Energy Storage Requirements for Achieving 50% Solar Photovoltaic Energy Penetration in California*, Nat’l Renewable Energy Laboratory (Aug. 2016), <http://www.nrel.gov/docs/fy16osti/66595.pdf>.

or likelihood of success of such claims because wholesale transmission and sales of electricity within California are already considered interstate commerce by virtue of California’s connection to the larger Western Interconnection. This subsection begins by discussing potential dormant Commerce Clause Challenges and then analyzes potential preemption claims.

The question of whether the state whose RPS is being challenged is part of a multi-state wholesale electricity market should not be a relevant factor in the dormant Commerce Clause analysis. As discussed in further depth below, a dormant Commerce Clause challenge to California’s RPS would need to argue that that the policy unjustifiably discriminates against out-of-state sellers, imposes excessive burdens on interstate commerce, or has the practical effect of controlling out-of-state conduct. California’s clean energy laws, including its RPS, already have the potential to impact out-of-state power producers by affecting their ability to sell their electricity into California. Transmission and sales of wholesale electricity in California are currently recognized as being part of interstate commerce due to California’s position as part of the integrated Western Interconnection.¹³⁰ Moreover, the definition of “interstate commerce” is even broader the Commerce Clause context than it is for the purposes of determining FERC’s jurisdiction under the Federal Power Act.¹³¹ California’s RPS sets requirements regarding how in-state utilities, electric service providers, and community choice aggregators can purchase electricity to meet the needs of their customers. The law thus affects interstate commerce in electricity and could be the target of dormant Commerce Clause challenges regardless of whether CAISO becomes a regional ISO.

As a recently filed case from New York shows,¹³² being in a single-state ISO does not protect states from facing dormant Commerce Clause challenges to their renewable portfolio standards. Even in a single-state ISO, the ISO-managed transmission lines are interconnected to the larger grid (in the case of NYISO, the Eastern Interconnection) and thus part of interstate commerce. Indeed, the only challenge to a state RPS program to receive a final disposition by a federal court on the merits, *Energy & Environment Legal Institute v. Epel*,¹³³ comes from Colorado, which is not part of any organized wholesale electricity market (but is part of the Western Interconnection). While Colorado successfully defended its RPS, the case illustrates that renewable portfolio standards may be the target of dormant Commerce Clause challenges regardless of the presence of a multi-state ISO due to the broad definition of interstate commerce in electricity.

It is important to emphasize that the state policy was upheld in the only case in which federal court has reached a final disposition on the merits of a dormant Commerce Clause challenge to

¹³⁰ See *infra* Part II.C.1.c.

¹³¹ See *infra* Part II.C.3.

¹³² See *Coalition for Competitive Electricity v. Zibelman*, No. 16-cv-08164 at *40 (S.D.N.Y. Oct. 19, 2016) (noting that “NYISO’s wholesale markets are interstate and international in nature, as they involve the sale and transmission of energy and capacity from generators located in other states and in Canada, and the purchase of such commodities by customers in other states”).

¹³³ *Energy & Env’t. Legal Inst. v. Epel*, 793 F.3d 1169 (10th Cir. 2015).

a RPS. In *Energy & Environment Legal Institute v. Epel*, the Tenth Circuit affirmed a district court’s dismissal of a dormant Commerce Clause challenge to Colorado’s Renewable Energy Standard, which had been brought by a group representing an out-of-state coal producer.¹³⁴ In another important case with an appeal pending, *Allco v. Klee*, a federal district court likewise upheld Connecticut’s RPS, which limits eligible resources to those in the ISO-New England region or an adjacent region.¹³⁵

However, it is still worth exploring in greater detail potential dormant Commerce Clause challenges to California’s RPS. As discussed in Part II.C.3, there are three major tests for determining whether a state policy violates the dormant Commerce Clause: (1) the strict scrutiny standard for facially discriminatory laws, (2) the *Pike* balancing test for laws that are facially neutral, and (3) the extraterritoriality test. While California’s RPS could conceivably face challenges under all three of these theories, the state is able to offer strong defenses of its law on all three grounds. Moreover, California’s ability to defend the law would not be impaired by the transition to a regional ISO.

If a law facially discriminates against interstate commerce, it will be subject to strict scrutiny. Under this standard, the law will be struck down unless the state can show that it “advances a legitimate local purpose that cannot be adequately served by reasonable nondiscriminatory alternatives.”¹³⁶ A law may be facially discriminatory for dormant Commerce Clause purposes if it imposes a surcharge or fee on out-of-state products¹³⁷ or otherwise provides preferential treatment for in-state sellers.¹³⁸

Renewable portfolio standards that give preferences to in-state resources may be challenged as facially discriminatory under this test. In dicta in *Illinois Commerce Commission v. FERC*, Judge Richard Posner of the Seventh Circuit suggested as much. He noted that an argument based on Michigan’s Renewable Energy Standard—which forbids giving credits to out-of-state wind resources—“trips over an insurmountable constitutional objection. Michigan cannot, without violating the commerce clause of Article I of the Constitution, discriminate against out-of-state renewable energy.”¹³⁹ However, it is important to remember that Michigan’s policy was not directly at issue in *Illinois Commerce Commission v. FERC* and the state did not have the opportunity to mount a full defense of the constitutionality of its policy. Still, legal commentators have made similar arguments about other RPSs that favor in-state resources,¹⁴⁰ with one

¹³⁴ 793 F.3d 1169 (10th Cir. 2015).

¹³⁵ *Allco Finance Ltd. v. Klee*, No. 3:15-cv-608, 2016 WL 4414774 (D. Conn. Aug. 18, 2016), *appeal pending* No. 16-2946 (2d Cir. Sept. 28, 2016) (appeal filed).

¹³⁶ *Ore. Waste Sys., Inc. v. Dep’t of Env’tl. Quality of Ore.*, 511 U.S. 93, 101 (1994) (quoting *New Energy Co. of Ind. v. Limbach*, 486 U.S. 269 (1988)).

¹³⁷ *Id.* at 99.

¹³⁸ *Id.* at 99 (“[D]iscrimination’ simply means differential treatment of in-state and out-of-state economic interests that benefits the former and burdens the latter.”); *Granholm v. Heald*, 544 U.S. 460, 473-476 (2005).

¹³⁹ *Illinois Commerce Comm’n v. FERC*, 721 F.3d 764, 776 (7th Cir. 2013)

¹⁴⁰ Kirsten H. Engel, *The Dormant Commerce Clause Threat to Market-Based Environmental Regulation: The Case of Electricity Deregulation*, 26 *Ecology L.Q.* 243, 288-94 (1999); Steven Ferrey, *Threading the*

prominent commentator arguing that California's 2010 adoption of the bucket system is problematic because it "has the effect of limiting out-of-state renewable generation RECs to a minority share of the compliance credits."¹⁴¹

However, California has strong ammunition to use in arguing that its RPS, including its "bucket" system for compliance, is not in fact discriminatory. In 2013, the CPUC considered and rejected a dormant Commerce Clause challenge to the California RPS, finding that the bucket system does not discriminate against out-of-state resources.¹⁴² The CPUC determined that out-of-state resources could be treated as "Category 1" resources because "[t]he boundaries of California balancing authority areas extend beyond the political boundaries of the State of California."¹⁴³ The statutory definition of "California balancing authority" includes the CAISO, and the term covers "a balancing authority with control over a balancing authority area *primarily* located in this state"¹⁴⁴ This is significant because it means that the statute does not require balancing authorities to be located exclusively within California in order to qualify as a "California balancing authority." Indeed, the current CAISO footprint includes part of Nevada, meaning that it is already effectively a multi-state entity, yet it continues to qualify as a "California balancing authority" for the purposes of the RPS. California officials have not yet determined how CAISO's Energy Imbalance Market will affect the "bucket" system¹⁴⁵ and this paper does not attempt to recommend how this issue should be resolved under a regional ISO construct. But as long as the definition of "California balancing authority" is not changed to strictly conform to "the political boundaries of the State of California," the state should be able to make use of the same reasoning that drove the CPUC decision, regardless of whether CAISO becomes a regional ISO.

California could also contend that its RPS does not impose a burden on interstate commerce in wholesale electricity but rather creates a new market for renewable energy resources in or near the state. Since California is effectively creating a new market rather than burdening pre-existing

Constitutional Needle with Care: The Commerce Clause Threat to the New Infrastructure of Renewable Power, 7 Tex. J. Oil Gas & Energy L. 59, 99 (2011-2012); Harvey Reiter, *Removing Unconstitutional Barriers to Out-of-State and Foreign Competition from State Renewable Portfolio Standards: Why the Dormant Commerce Clause Provides Important Protection for Consumers and Environmentalists*, 36 Energy L.J. 45 (2015); Trevor D. Stiles, *Renewable Resources and the Dormant Commerce Clause*, 4 Env'tl. & Energy L. Pol'y J. 34, 64-65 (2009); Patrick R. Jacobi, Note, *Renewable Portfolio Standard Generator Applicability Requirements: How State Can Stop Worrying and Learn to Love the Dormant Commerce Clause*, 30 Vt. L. Rev. 1079, 1111 (2006).

¹⁴¹ Steven Ferrey, *California Challenges and Vulnerabilities of the New Business Model Design for Power*, 6 San Diego J. Climate & Energy L. 1, 21 (2015).

¹⁴² Order Denying Applications for Rehearing of Decision (D.) 11-12-052 (Cal. Pub. Utils. Comm'n Nov. 1, 2013).

¹⁴³ *Id.* at 11.

¹⁴⁴ Cal. Pub. Util. Code § 399.12(d) (West 2017) (emphasis added). This statutory provision also says, "[a] California balancing authority is responsible for the operation of the transmission grid within its metered boundaries which is not limited by the political boundaries of the State of California." *Id.*

¹⁴⁵ *Renewables Portfolio Standard Eligibility: Ninth Edition, Commission Guidebook*, Cal. Energy Comm'n 3 (Jan. 2017), http://docketpublic.energy.ca.gov/PublicDocuments/16-RPS-01/TN215573_20170125T160830_Renewables_Portfolio_Standard_Eligibility_Guidebook_Ninth_Edit.pdf.

interstate commerce, the state could argue, geographic limitations do not offend the dormant Commerce Clause. The court in *Allco* found this reasoning persuasive, finding that Connecticut's RPS—which limits eligibility to resources in ISO-New England and adjacent regions—“is part of a plan by the state to subsidize the generation of renewable energy, and the resulting [Renewable Energy Credit] market is wholly a creation of the RPS statute.”¹⁴⁶ Drawing analogies to Supreme Court cases that exempted states from dormant Commerce Clause scrutiny when they were acting as market participants rather than regulators,¹⁴⁷ the court found that the Connecticut RPS's regional limitation did not violate the dormant Commerce Clause.¹⁴⁸ As the *Allco* case demonstrates, this reasoning could be invoked regardless of whether the state whose RPS is being challenged is part of a multi-state ISO.

Even if an RPS with in-state preferences is deemed facially discriminatory, it could survive strict scrutiny if the state can demonstrate that it “advances a legitimate local purpose that cannot be adequately served by reasonable nondiscriminatory alternatives.”¹⁴⁹ Thus California could defend its bucket system by arguing that the preference for resources connected to a California balancing authority is based on a legitimate local purpose. The RPS statute itself notes that the use of eligible renewable resources “is necessary to improve California's air quality and public health.”¹⁵⁰ The state could argue that in order to achieve those benefits, it is necessary to use the bucket system to ensure that a significant portion of the eligible renewable energy is deliverable to California customers, thus allowing the state's load serving entities to avoid relying on resources that cause more pollution. The state could draw on language from the RPS statute to support such an argument. The RPS statute indicates that the differentiation of renewable resources under the bucket system is based on differences in the resources' “impacts on the operation of the grid in supplying electricity, as well as meeting the requirements of this article.”¹⁵¹ This provision supports the argument that the bucket system is based on deliverability and impact on the local fuel mix, which are legitimate local interests. Additionally, the statute defines the first bucket as including resources that “[h]ave a first point of interconnection with a California balancing authority, have a first point of interconnection with distribution facilities used to serve end users within a California balancing authority area, *or are scheduled from the eligible renewable energy resource into a California balancing authority*

¹⁴⁶ *Allco Finance Ltd. v. Klee*, No. 3:15-cv-608, 2016 WL 4414774, at *24 (D. Conn. Aug. 18, 2016), *appeal pending* No. 16-2946 (2d Cir. Sept. 28, 2016) (appeal brief filed) (“Connecticut is not preventing the flow of clean energy or regulating the conditions on which it may occur. Instead, Connecticut, through its RPS statute, has created a secondary REC market that incentivizes the production and distribution of clean energy in and around Connecticut, where it will have a measurable impact on Connecticut's environmental goals.”).

¹⁴⁷ *Id.* at *24 (citing *Hughes v. Alexandria Scrap Corp.*, 426 U.S. 794 (1976), and *Reeves, Inc. v. Stake*, 447 U.S. 429 (1980)).

¹⁴⁸ *Id.* at *24 (“Connecticut created a market for RECs, and is not obligated to spread the benefit of that market to states that do not also bear the burden of the cost of the subsidy, which is ultimately paid by Connecticut ratepayers.”).

¹⁴⁹ *Ore. Waste Sys., Inc. v. Dep't of Env'tl. Quality of Ore.*, 511 U.S. 93, 101 (1994).

¹⁵⁰ Cal. Pub. Util. Code § 399.11(e)(1) (West 2017).

¹⁵¹ Cal. Pub. Util. Code § 399.16(a) (West 2017).

*without substituting electricity from another source.*¹⁵² This third clause makes it clear that the focus is not on the physical location of the resource but rather its ability to deliver power that can be used to serve California consumers.

The district court in *Allco* found a similar argument convincing, noting that Connecticut’s goal of reducing air pollution “is not served by” paying for renewable generation in remote states “unless that energy displaces Connecticut’s own use of non-renewable energy sources.”¹⁵³ The CPUC used similar reasoning when it found that the preference for resources connected to a California balancing authority was not motivated by a discriminatory purpose but rather intended “to ensure that California end users actually receive the eligible renewable energy associated with the REC in order to realize the benefits of the RPS statute.”¹⁵⁴ While it is uncertain whether and how the bucket system might change with the shift to a regional ISO, California should be able to continue to make arguments about the importance of ensuring that renewable energy procured to meet its RPS is actually deliverable to California consumers and thus providing the intended benefits.

While the decision in *Energy & Environment Legal Institute v. Epel* provides encouragement for supporters of state RPSs, it is important to note that the version of the Colorado RPS reviewed by the district court and Tenth Circuit did not include preferences for in-state resources. In upholding the law, the court pointed out that “as far as we know, all fossil fuel producers in the area served by the grid will be hurt equally and all renewable energy producers in the area will be helped equally.”¹⁵⁵ In fact, Colorado is one of several states that have moved away from in-state resource preferences in response to claims that such preferences amounted to constitutional violations.¹⁵⁶ However, numerous states in multi-state ISOs continue to use renewable portfolio standards that include preferences for in-state resources.¹⁵⁷

¹⁵² Cal. Pub. Util. Code § 399.16(b)(1)(A) (West 2017) (emphasis added).

¹⁵³ *Allco Finance Ltd. v. Klee*, No. 3:15-cv-608, 2016 WL 4414774, at *25 (D. Conn. Aug. 18, 2016), *appeal pending* No. 16-2946 (2d Cir. Sept. 28, 2016) (appeal brief filed).

¹⁵⁴ Order Denying Applications for Rehearing of Decision (D.) 11-12-052, at 13 (Cal. Pub. Utils. Comm’n Nov. 1, 2013).

¹⁵⁵ *Energy & Envtl. Legal Inst. v. Epel*, 793 F.3d 1169, 1174 (10th Cir. 2015).

¹⁵⁶ After the Commerce Clause challenge in *Nichols v. Markell* survived a motion to dismiss, “Delaware regulators agreed to waive the statute’s requirements that a qualified fuel cell be located in Delaware.” *Delaware*, State Power Project, <https://statepowerproject.org/delaware/>. Massachusetts abandoned its in-state requirement for long-term contracts after TransCanada challenged the policy. *Massachusetts: TransCanada Power Marketing v. Ian Bowles, et al.*, State Power Project, <https://statepowerproject.org/massachusetts/#trans>. A Commerce Clause challenge to Ohio’s RPS was rendered moot after that state’s governor temporarily froze the RPS and permanently removed its in-state requirements. *Ohio*, State Power Project, <https://statepowerproject.org/ohio/>.

¹⁵⁷ For instance, in Michigan, which is covered by MISO, “[a]lternative electric suppliers are generally not permitted to meet the standard using out-of-state resources” and “[r]enewable electricity produced using a system which was constructed using an in-state workforce receives an additional 1/10 credit per MWh.” *Renewable Energy Standard*, DSIRE (Feb. 28, 2017), <http://programs.dsireusa.org/system/program/detail/3094>. In Iowa, which is also in MISO’s footprint, “A utility must meet its RPS obligation by either owning renewable energy production facilities located in Iowa or entering into long-term contracts to purchase or wheel electricity from renewable energy

If a court determines that California's RPS is not discriminatory, a challenger could still argue that it fails the *Pike* balancing test and is thus invalid under the dormant Commerce Clause. Under *Pike*, state laws that are facially neutral "will be upheld unless the burden imposed on [interstate] commerce is clearly excessive in relation to the putative local benefits."¹⁵⁸ This is a considerably looser standard than that which the law would face if it is deemed discriminatory. California could defend its RPS by arguing that any burdens on interstate commerce are minimal and significantly outweighed by local benefits.

The California RPS's statutory language identifies many potential local benefits, including reductions in air pollution and greenhouse gas emissions and improved reliability through diversification of the fuel mix.¹⁵⁹ Since California's RPS has been in place in for many years, there is no shortage of data that could be marshalled to support such arguments.¹⁶⁰ Enhanced Western grid integration would not undermine California's ability to make such arguments about the benefits of its RPS. In fact, to the extent that regional integration helps California realize the benefits of the RPS, it would improve California's ability to defend the law under the *Pike* analysis.

The district court in *Epel* held that Colorado's RPS passed the *Pike* balancing test.¹⁶¹ The challengers in that case claimed that the law burdened interstate commerce by creating a lack of uniformity in state laws, but they failed to demonstrate how that lack of uniformity "limited interstate commerce in the electricity market." Given that multi-state ISOs like ISO-NE, MISO, PJM, and SPP have been able to accommodate a diversity of state renewable portfolio standards,¹⁶² and that a strong FERC-jurisdictional bilateral contract market exists for renewable energy procurement, California will be able to make similar argument even if CAISO becomes a regional ISO. The district court in *Epel* also rejected the argument that Colorado's RPS burdened interstate commerce by reducing the market for fossil generation, finding that such an effect was permissible so long as the RPS does not "cause[] greater harm to out-of-state coal and hydrocarbon electricity generators than is caused to in-state coal and hydrocarbon electricity generators."¹⁶³ California would be able to make a similar argument—that its RPS does not limit *out-of-state* fossil generators any more than it limits in-state fossil generators—regardless of whether CAISO retains its current footprint or expands.

production facilities located in the utility's service area." *Alternative Energy Law (AEL)*, DSIRE (Dec. 9, 2016), <http://programs.dsireusa.org/system/program/detail/265>.

¹⁵⁸ *Pike v. Bruce Church, Inc.*, 397 U.S. 137, 142 (1970).

¹⁵⁹ See Cal. Pub. Util. Code § 399.11(b) (West 2017).

¹⁶⁰ See e.g. Ryan Wiser et al., *A Retrospective Analysis of the Benefits and Impacts of U.S. Renewable Portfolio Standards*, Nat'l Renewable Energy Laboratory & Lawrence Berkeley Nat'l Laboratory 10 (Jan. 2016) (showing that California's RPS reduced in-state fossil generation by 13.9% in 2013).

¹⁶¹ *Energy & Env't. Legal Inst. v. Epel*, 43 F. Supp. 3d 1171, 1182-84 (D. Colo. 2014). The plaintiffs did not challenge this part of the decision on appeal. *Id.* at 1172.

¹⁶² See *Renewable Portfolio Standards*, DSIRE (Feb. 2017), <http://ncsolarcen-prod.s3.amazonaws.com/wp-content/uploads/2017/03/Renewable-Portfolio-Standards.pdf> (showing the diversity of state renewable portfolio standards).

¹⁶³ 43 F. Supp. 3d 1171, 1182.

The final level of dormant Commerce Clause analysis is the extraterritoriality test. Under this test, a state law is unconstitutional if it applies “to commerce that takes place wholly outside of the State’s borders, whether or not the commerce has effects within the state.”¹⁶⁴ Challengers could try to argue that California’s RPS effectively sets rules for generators located in other states and that such rules affect transactions between out-of-state generators and other out-of-state parties. Notably, however, the Ninth Circuit—which has jurisdiction over California as well as Alaska, Arizona, Hawaii, Idaho, Montana, Nevada, Oregon, and Washington—has taken a narrow view of the extraterritoriality test, holding in *Association des Eleveurs de Canards et d’Oies du Quebec v. Harris* that the extraterritoriality limit only applies when a statute sets the price of a product or “[i]es] the price of its in-state products to out-of-state prices.”¹⁶⁵

In *Energy & Environment Legal Institute v. Epel*, the plaintiff focused its appeal on the district court’s determination that that Colorado’s RPS did not control out-of-state conduct and thus was not subject to the stricter scrutiny applicable to extraterritorial laws. Adopting the extraterritoriality test used by the Ninth Circuit in *Association des Eleveurs de Canards et d’Oies du Quebec*, the Tenth Circuit held (in an opinion authored by then-Judge Neil Gorsuch) that the extraterritoriality doctrine “concerns only ‘price control or price affirmation statutes’ that involve ‘tying the price of ... in-state products to out-of-state prices.’”¹⁶⁶ The court found that Colorado’s RPS “doesn’t directly regulate price in-state or anywhere for that matter.”¹⁶⁷ Instead, the court determined that the law merely “set[s] non-price standards for products sold in-state” and does not violate the dormant Commerce Clause’s extraterritoriality limit.¹⁶⁸ This is highly useful precedent because it shows how a court using a narrow version of the extraterritoriality test might reason about California’s RPS. *Epel* suggests that California’s RPS should survive an extraterritoriality challenge because it sets standards for the generation mix used to serve California consumers but does not directly regulate prices. This core feature of the RPS would not change with enhanced regional grid integration.

Because both the Ninth and Tenth Circuits have held that the Commerce Clause’s extraterritoriality limit only applies when a statute sets the price of a product or “[i]es] the price of its in-state products to out-of-state prices,” California’s RPS is well protected from an extraterritoriality challenge. Thus, if California’s RPS were attacked on dormant Commerce Clause grounds, the main concerns would be whether the California RPS is facially discriminatory or imposes an excessive burden on interstate commerce. The analytical approach to assessing these questions does not change based on whether CAISO is a single-state or multistate ISO. Because California’s transmission facilities are connected to other parts of the Western Interconnection, the wholesale electricity transmission and sales that CAISO

¹⁶⁴ *Edgar v. MITE Corp.*, 457 U.S. 624, 642-43 (1982).

¹⁶⁵ *See Assoc. des Eleveurs de Canards et d’Oies du Quebec v. Harris*, 729 F.3d 937, 951 (9th Cir. 2013).

¹⁶⁶ *Energy & Env’t. Legal Inst. v. Epel*, 793 F.3d 1169, 1175 (10th Cir. 2015) (quoting *Pharm. Research Mfrs. of Am. v. Walsh*, 528 U.S. 644, 669 (2003)).

¹⁶⁷ *Id.* at 1173.

¹⁶⁸ *Id.* at 1173.

currently coordinates are already part of interstate commerce.

The other important constitutional rule to keep in mind is the Supremacy Clause. Opponents of California's RPS could argue that certain aspects of the RPS conflict with and thus are preempted by a federal law such as the Federal Power Act or the Public Utility Regulatory Policies Act of 1978 (PURPA). Indeed, the state's feed-in tariff is currently being challenged as preempted by PURPA.¹⁶⁹ As this case shows, CAISO's status as a single-state ISO does not shield California's RPS from Supremacy Clause attacks. **An integrated Western electricity market would not strengthen the legal basis for preemption because wholesale electricity transmission and sales in California are already subject to FERC jurisdiction under the Federal Power Act and PURPA. That critical underlying fact will not change, regardless of whether CAISO becomes a regional ISO.**

The other major pending preemption case, *Allco v. Klee*, involves a challenge to a state-run competitive solicitation process intended to help local utilities satisfy Connecticut's RPS.¹⁷⁰ Plaintiffs in that case claim that the RFP process, which excluded resources smaller than 20 MW, violated both PURPA and the FPA.¹⁷¹ Plaintiff's arguments in that case hinge on the notion that the Connecticut regulators invaded FERC's exclusive jurisdiction by "compel[ling] wholesale sales."¹⁷² This case is likely distinguishable because the CPUC does not directly run competitive solicitations, but it is important to emphasize that Allco's argument in this case is not contingent on the fact that Connecticut is part of the multi-state ISO New England.

Similarly, courts have held that PURPA does not preempt state regulations on renewable energy credits, which many states, including California, use in administering their renewable portfolio standards. In *Wheelabrator Lisbon v. Connecticut Department of Public Utilities Control*, the Second Circuit¹⁷³ held that FERC's decision in *American Ref-Fuel Co.*¹⁷⁴ "does not evince an intent to occupy the relevant field—namely, the regulation of renewable energy credits. Rather, it explicitly acknowledges that state law governs the conveyance of RECs."¹⁷⁵ Other courts in New Jersey, Pennsylvania, and West Virginia, have reached the same conclusion.¹⁷⁶ Notably, these decisions concern states that are part of multi-state ISOs. The rationale of these decisions rests on the scope of PURPA and FERC regulations thereunder

¹⁶⁹ *Winding Creek Solar LLC v. Peevey*, No. 13-cv-04934-JD (N.D. Cal. Feb. 17, 2015) (order granting in part and denying in part motion to dismiss second amended complaint).

¹⁷⁰ *Allco Finance Ltd. v. Klee*, No. 16-2949 (2d Cir. Sept. 28, 2016) (brief filed). In addition to its Supremacy Clause challenge, Allco also alleges that Connecticut's RPS violates the dormant Commerce Clause, as discussed above.

¹⁷¹ *Id.*

¹⁷² *Id.* at 7.

¹⁷³ 531 F.3d 183 (2d Cir. 2008).

¹⁷⁴ 105 FERC ¶ 61,004 (2003).

¹⁷⁵ 531 F.3d at 190.

¹⁷⁶ *Morgantown Energy Assocs. v. Pub. Serv. Comm'n of W. Va.*, 2013 WL 5462386 (S.D. W. Va. Sept. 30, 2013); *City of New Martinsville v. Pub. Serv. Comm'n*, 729 S.E.2d 188 (W. Va. 2012); *ARIPPA v. Pa. Pub. Util. Comm'n*, 966 A.2d 1204 (Pa. Commw. Ct. 2009); *In re Ownership of Renewable Energy Certificates*, 913 A.2d 825 (N.J. Super. Ct. App. Div. 2007).

and not on the geographic footprint of the ISO that serves the state.

The Supreme Court's recent decision in *Hughes v. Talen Energy Marketing*, which struck down a state order requiring utilities to enter into a contract-for-differences with a new power plant as preempted by the Federal Power Act,¹⁷⁷ has raised questions about how directly states can get involved with resource procurement decisions. This is potentially significant for California's RPS, which includes a number of procurement programs that are closely overseen by the CPUC.¹⁷⁸ While *Hughes* does indicate a limit on state regulatory authority, the majority opinion includes language indicating that the holding is "limited" to the specific contract at issue in that case and should not be "read to foreclose Maryland and other States from encouraging production of new or clean generation through measures untethered to a generator's wholesale market participation."¹⁷⁹ *Hughes* is unlikely to pose a threat to California's RPS because the RPS does not peg renewables compensation to wholesale market prices. This would not change with enhanced Western grid integration since there is no proposal to add a capacity market as part of CAISO's transformation into a regional ISO.¹⁸⁰

2. Greenhouse Gas Emissions Performance Standard

a. Existing Policy

In 2006, California passed into law S.B. 1368, a greenhouse gas Emissions Performance Standard (EPS). The world's first such standard, S.B. 1368 (Chapter 3, Section 8340, Division 4.1 of the Public Utilities Code) requires any baseload generation¹⁸¹ receiving long-term investments from California electricity providers to achieve a minimum level of environmental performance, measured in greenhouse gas emissions per unit of electricity production. The bill defines "baseload generation" as "electricity generation from a power plant that is designed and intended to provide electricity at an annualized plant capacity factor of at least 60 percent."

The EPS applies to all entities that provide electricity in California's retail markets, whether investor owned utilities, municipal utilities, community choice aggregators, or other energy service providers. The standard is entirely fuel and technology neutral, which means it shows no preference for coal, natural gas or renewables of any kind. It mandates that any 'long-term' investments of more than five years, or ownership of baseload energy generation resources, that is new build or retrofitted, involve generation emitting no more than 1,100 pounds of

¹⁷⁷ 136 S. Ct. 1288 (2016).

¹⁷⁸ See, e.g., *Utility Scale Request for Offers (RFO)*, Cal. Pub. Utils. Comm'n, http://cpuc.ca.gov/Utility_Scale_RFO/.

¹⁷⁹ 126 S. Ct. at 1299 (internal quotations omitted).

¹⁸⁰ *Id.* Indeed, CAISO's proposed principles for governance of a regional ISO include explicit restrictions on CAISO's ability to add a centralized capacity market in the future. *Second Revised Proposal: Principles for Governance of a Regional ISO*, Cal. Indep. Sys. Operator Corp. 4 (Oct. 7, 2016), <https://www.aiso.com/Documents/PrinciplesForGovernanceofaRegionalISO-Clean.pdf>.

¹⁸¹ Cal. Pub. Util. Code § 8340(a) (West 2017).

greenhouse gas emissions per megawatt hour (lb/MWh).¹⁸² The standard applies on a per plant basis and is based on a state-of-the art 2006 or newer vintage natural gas combined cycle power plant (NGCC). No generator that is more carbon intensive is permitted unless it is able to meet the standard via other technologies such as carbon capture and sequestration (CCS). The average current emissions for an NGCC plant is roughly 945 lb/MWh, whereas the average emissions for a pulverized coal plant is well above 2,000 lb/MWh.¹⁸³ Thus, the effect of the EPS is to sunset long-term contracts between California Load Serving Entities (LSE) and coal plants, unless they employ CCS. The emissions-based approach to regulating long-term investments in energy generating units has helped reduce emissions from generating sources serving California loads and helped drive record levels of renewable energy penetration in California by creating room for more low-carbon resources to be added to the generation stack. This policy protects California consumers against financial risk and reliability concerns associated with electricity supply from carbon intensive resources.¹⁸⁴

b. Policy Analysis

Under SB 1368, California's greenhouse gas emissions performance standard (EPS) sets a maximum level of carbon dioxide emissions for baseload power plants with which in-state publicly owned and investor-owned utilities enter into ownership agreements or long-term contracts. The law and implementing regulations are aimed at accomplishing two main objectives: 1) reducing the financial risk that California energy consumers face in anticipation of a carbon constrained system with more stringent limits on greenhouse gas (GHG) emissions, and 2) improving and maintaining grid reliability in the face of a rapidly evolving energy sector transformation, particularly in the face of possible unplanned retirements of GHG-intensive generation as regulatory constraints and costs increase.¹⁸⁵ Enhanced Western grid integration will continue to shield California utility consumers from financial risk associated with baseload power procurement in a carbon constrained system by reducing costs, and it will improve reliability without limiting the efficacy of the EPS.

The crucial aspect of the performance standard as it pertains to enhanced Western grid integration is that the EPS applies to both in-state and out-of-state investments, regardless of whether the grid is operated under a single independent system operator (ISO). The current framework for meeting resource adequacy in the CAISO area is done through bilateral procurement, and CAISO's regional framework proposal¹⁸⁶ indicates that resource adequacy under an enhanced integrated grid should continue to be done consistent with existing Local

¹⁸² *Greenhouse Gas Emissions Performance Standard*, Cal. Pub. Utils. Comm'n, <http://www.cpuc.ca.gov/General.aspx?id=5927>.

¹⁸³ Danny Cullenward, *Leakage in California's Carbon Market*, 27 *Electricity J.* 36 (2014).

¹⁸⁴ Gary Collord, *Implementation of SB 1368 Emission Performance Standard*, Cal. Energy Comm'n (Nov. 2006), <http://www.energy.ca.gov/2006publications/CEC-700-2006-011/CEC-700-2006-011.PDF>.

¹⁸⁵ *Id.*

¹⁸⁶ *Regional Resource Adequacy: Draft Regional Framework Proposal*, Cal. Indep. Sys. Operator Corp. (Dec. 1, 2016), <http://www.caiso.com/Documents/RegionalFrameworkProposal-RegionalResourceAdequacy.pdf>.

Regulatory Authority guidelines (the CPUC in this case). CAISO maintains the ability to procure short-term, backstop capacity to maintain grid reliability in certain circumstances,¹⁸⁷ but this is not a substitute for long-term planning and procurement, which will still be done through bilateral contracts. While deliberation is ongoing¹⁸⁸ and further consideration of resource adequacy and transmission access charges is needed, these debates will not impact California's EPS because long-term contractual procurement of baseload power will remain the "bottom up" responsibility of the Local Regional Authority and the LSEs that they govern.¹⁸⁹

As demonstrated by recent reporting on CAISO and the energy imbalance market (EIM),¹⁹⁰ with surrounding states either mimicking the policy or expressing indifference to the EPS impacts on their power supply, the EPS has helped improve reliability and is likely to save customers additional money in an enhanced Western grid. Other Western states that have followed suit with similar legislation to the EPS, including Washington and Oregon, as well as states that do not have such legislation on the books, such as Wyoming and Montana, should take comfort in CAISO's approach to resource adequacy issues that arise in an enhanced expanded Western grid. The California Energy Commission (CEC) *Docket on Principles and Issues for a Western Grid* reaffirms this: "Areas requiring uniformity across the expanded footprint, such as transmission cost allocation and resource adequacy rules, should be decided by a Regional/State Committee of regulators."¹⁹¹ Planning of resource adequacy would no doubt need to shift somewhat for all LSEs in an expanded grid, but CAISO's proposals thus far have made clear that under enhanced grid integration they would consult with all states (Local Regional Authorities/or Public Utility Commission (PUCs)) on resource adequacy assessments, which should result in lower costs collectively.

The EPS as it stands currently has effectively served its purpose, and it is not currently constraining California utilities and other LSEs, because the economics have dissuaded LSEs from building new coal generating facilities since 2013 across the U.S. This is primarily due to low natural gas prices and over-compensation in capacity requirements following the California energy crises, coupled with stagnant electricity demand and decreasing wholesale prices that track the decline in fuel costs as renewable penetration increases. In addition, the global trends toward a carbon constrained world remain strong, as evidenced by rapid entry-into-force and

¹⁸⁷ Jenny Pedersen, *Capacity Procurement Mechanism Overview*, Cal. Indep. Sys. Operator Corp. (Mar. 3, 2011), <http://www.aiso.com/Documents/CapacityProcurementMechanismOverview.pdf>.

¹⁸⁸ *Principles and Issues for a Western Regional ISO: Guiding Principles*, Cal. Energy Comm'n (Apr. 29, 2016), http://docketpublic.energy.ca.gov/PublicDocuments/16-RGO-01/TN211294_20160429T112227_Principles_And_Issues_For_A_Western_Regional_ISO.pdf.

¹⁸⁹ *Regional Resource Adequacy: Draft Regional Framework Proposal*, Cal. Indep. Sys. Operator Corp. (Dec. 1, 2016), <http://www.aiso.com/Documents/RegionalFrameworkProposal-RegionalResourceAdequacy.pdf>.

¹⁹⁰ Robert Mullin, *EIM Benefits up 8% in Q4 with APS, Puget Sound Additions*, RTO Insider (Feb. 2, 2017), <https://www.rtoinsider.com/eim-q4-aps-puget-sound-37968/>.

¹⁹¹ *Principles and Issues for a Western Regional ISO: Guiding Principles*, Cal. Energy Comm'n 3 (Apr. 29, 2016), http://docketpublic.energy.ca.gov/PublicDocuments/16-RGO-01/TN211294_20160429T112227_Principles_And_Issues_For_A_Western_Regional_ISO.pdf.

firm contributions made by nearly all countries to the Paris Agreement.¹⁹² This is now a prevailing economic trend, where for the third year running, in 2016 global emissions ticked down from the prior year while global economic output grew by 3%.¹⁹³ **The intent and successes of the EPS are not likely to be affected by enhanced Western grid integration because enhanced integration does not supplant or alter the need for state-led resource adequacy planning and procurement.**

California and other Western states are likely to realize significant savings in the form of reduction in renewable energy investment costs and reduction in generation capacity costs associated with meeting planning reserve capacity. In addition to reducing emissions from California's long-term baseload generation and hedging long-term financial risk in a carbon constrained system, the second California policy interest embodied in the EPS is to bolster grid reliability. Overall, CAISO currently has a total installed capacity of 71,740 MW, of which roughly 4% is coal or nuclear baseload, and 54.2% is natural gas, which offers flexible baseload. Despite an average daily peak of around 28,000 MW, and even at the historical peak demand at 50,270 MW set on July 24, 2006, the system is very well equipped to serve demand with a safe level of capacity reserve.¹⁹⁴ With resource adequacy planning processes being gauged toward an enhanced Western grid dispatched over a broader geography, resulting in decreased production and capacity costs, the trend toward greater renewable penetration would likely continue. The need for new baseload generation declines as our grid and power mix becomes more responsive, distributed and less centralized. While CAISO is not interested in seeking more baseload power, it does still seek flexible resources (to the tune of roughly 20,000 MW¹⁹⁵) to meet the increasingly steep "duck-curve." The EPS and its accompanying regulations, are written to ensure that the standard does not adversely impact reliability, and enhanced grid integration would actually improve grid reliability in a future system. Enhanced grid integration would enable CAISO to draw flexible baseload more readily from areas currently outside the ISO and give the dispatchers more low-carbon options to draw from. This would contribute to cost savings due to less overall reserve margin¹⁹⁶ and less need for new-build additional flexible capacity across the system, while maintaining reliability.

Together, the power used in California from coal and "unspecified sources"¹⁹⁷ totals about 20% (57,608 GWh) of California's annual usage. Flexible capacity needs identified by CAISO are

¹⁹² *The Paris Agreement*, United Nations Framework Convention on Climate Change, http://unfccc.int/paris_agreement/items/9485.php.

¹⁹³ Pilita Clark, *Sharp Drop in US Emissions Keeps Global Levels Flat*, Fin. Times (Mar. 17, 2017), <https://www.ft.com/content/540ebb0c-0a60-11e7-ac5a-903b21361b43>.

¹⁹⁴ *Today's Outlook*, Cal. Indep. Sys. Operator Corp., <http://www.caiso.com/Pages/TodaysOutlook.aspx>.

¹⁹⁵ *Final Flexible Capacity Needs Assessment for 2017*, Cal. Indep. Sys. Operator Corp. (Apr. 29, 2016), <http://www.caiso.com/Documents/FinalFlexibleCapacityNeedsAssessmentFor2017.pdf>.

¹⁹⁶ *SB 350 Study: The Impacts of a Regional ISO-Operated Power Market on California*, Cal. Indep. Sys. Operator Corp. et al. (July 8, 2016), https://www.caiso.com/Documents/SB350Study_AggregatedReport.pdf.

¹⁹⁷ *Total Electricity System Power*, Cal. Energy Comm'n (July 11, 2016), http://www.energy.ca.gov/almanac/electricity_data/total_system_power.html. Total energy requirement for all load serving entities with end-use loads in California. Unspecified sources are currently evaluated as having emissions equal to a natural gas combined cycle plant.

roughly 20,000 MW which, at a rated capacity of 60%, equates to about 105,000 GWh. Pursuant to the EPS, this suggests that California might meet its future flexible baseload needs in an enhanced integrated Western grid by supplanting its coal and “unspecified sources” imports with some combination of lower-emitting flexible combined cycle gas, storage and “potentially improved controllability of some variable resources”¹⁹⁸, as opposed to adding new flexible generating facilities. This leads to reductions in net costs associated with California LSE production, and lower generation capacity costs associated with meeting planning reserve capacity. It might also require generating units with higher fuel costs to face a more price efficient market, which may further emphasize existing economic trends toward more frequent dispatch of low-carbon energy. **In sum, integration of larger swaths of the Western grid would have no effect on the impact or legal vulnerability of California’s EPS, and would likely contribute to significant cost savings in achieving resource adequacy, and in long term planning and procurement of energy generating units by California Load Serving Entities.**

c. Legal Analysis

Because the EPS imposes performance standards on out-of-state power plants that want to enter into long-term contracts with California publicly-owned utilities (POUs), it may raise dormant Commerce Clause concerns. It could also raise preemption concerns if a court believes that the policy precludes certain wholesale electricity sales. However, neither of these legal risks would change based on CAISO’s regional expansion because wholesale electricity transactions in California are already considered interstate commerce. Thus California laws that impact such transactions are already subject to potential preemption under the Federal Power Act (FPA) and to the limitations of the dormant Commerce Clause.

This section begins by laying out the key statutory provisions of the emissions performance standard. It then analyzes California’s greenhouse gas emissions portfolio standard (EPS) under each of the three dormant Commerce Clause tests and explains why enhanced grid integration does not affect the analysis under these tests. It concludes by discussing potential preemption claims.

The key relevant provision of the EPS says, “No load-serving entity or local publicly owned electric utility may enter into a long-term financial commitment unless any baseload generation supplied under the long-term financial commitment complies with the greenhouse gases emission performance standard”¹⁹⁹ The statute defines “load-serving entity” as “every electrical corporation, electric service provider, or community choice aggregator serving end-use customers *in the state*”²⁰⁰ while the term “local publicly owned electric utility” covers California

¹⁹⁸ *Id.*; *Final Flexible Capacity Needs Assessment for 2017*, Cal. Indep. Sys. Operator Corp. (Apr. 29, 2016), at 23

¹⁹⁹ Cal. Pub. Util. Code § 8341(a) (West 2017).

²⁰⁰ Cal. Pub. Util. Code § 8340(e) (West 2017) (emphasis added).

municipal utilities, public utility districts, irrigation districts, or joint powers authorities.²⁰¹ The obligations of the EPS thus fall exclusively on companies that serve California consumers. The other key term in this provision is “baseload generation,” which is defined as “electricity generation from a power plant that is designed and intended to provide electricity at an annualized plant capacity factor of at least 60 percent.”²⁰² This means that the standard applies to all baseload power plants, regardless of whether they are located in California or elsewhere. Finally, “long-term financial commitment” is defined as “either a new ownership investment in baseload generation or a new or renewed contract with a term of five or more years, which includes procurement of baseload generation.”²⁰³ These sorts of long-term bilateral contracts are handled outside the CAISO markets.

It is important to emphasize that these key provisions regarding the scope and applicability of the law would not change with a move to a regional independent system operator (ISO). Moreover, the long-term bilateral contracts that are the target of the EPS would continue to exist independent of CAISO’s markets even with enhanced regional grid integration. For these reasons, the creation of a regional ISO will not affect the constitutionality of the EPS.

The first dormant Commerce Clause test imposes strict scrutiny on state laws that discriminate against interstate commerce by imposing fees on out-of-state products²⁰⁴ or providing preferential treatment for in-state companies.²⁰⁵ State laws that fall into this category are unconstitutional unless the state demonstrates that they “advance[] legitimate local purpose that cannot be adequately served by reasonable nondiscriminatory alternatives.”²⁰⁶

Based on the terms of the EPS, it is clear that the law does not facially discriminate against interstate commerce. First, the obligations of the law fall only on companies with customers in the state of California. Second, the EPS applies equally to all baseload generators, regardless of whether they are in-state or out-of-state. In this way, the EPS is similar to the low-carbon fuel standard (LCFS) that was reviewed by the Ninth Circuit in *Rocky Mountain Farmers Union v. Corey*. In that case, the court held that the law was not facially discriminatory because it “does not base its treatment on a fuel’s origin but on its carbon intensity.”²⁰⁷ Similarly, the EPS uses a standard based on greenhouse gas emissions, not the location of the baseload power plant. Because the EPS does not impose special burdens on out-of-state producers or give preferential treatment to in-state businesses, it is not vulnerable to a challenge based on facial discrimination. There is no reason why these fundamental features of the EPS would change

²⁰¹ Cal. Pub. Util. Code § 224.3 (West 2017).

²⁰² Cal. Pub. Util. Code § 8340(a) (West 2017).

²⁰³ Cal. Pub. Util. Code § 8340(f) (West 2017).

²⁰⁴ *Ore. Waste Sys., Inc. v. Dep’t of Env’tl. Quality of Ore.*, 511 U.S. 93, 99 (1994).

²⁰⁵ *Id.* at 99 (“[D]iscrimination’ simply means differential treatment of in-state and out-of-state economic interests that benefits the former and burdens the latter.”); *Granholm v. Heald*, 544 U.S. 460, 473-476 (2005).

²⁰⁶ *Ore. Waste Sys., Inc. v. Dep’t of Env’tl. Quality of Ore.*, 511 U.S. 93, 101 (1994) (quoting *New Energy Co. of Ind. v. Limbach*, 486 U.S. 269 (1988)).

²⁰⁷ *Rocky Mountain Farmers Union v. Corey*, 730 F.3d 1070, 1090 (9th Cir. 2013).

with a shift to a regional ISO. Thus the risk of this form of a dormant Commerce Clause challenge will not be affected by enhanced regional grid integration.

If a court determines that the EPS is not discriminatory, but that a dormant Commerce Clause violation could still exist, then the court would apply the *Pike* inquiry of whether “the burden imposed on [interstate] commerce is clearly excessive in relation to the putative local benefits.”²⁰⁸ Opponents of the law might argue that the EPS imposes burdens on interstate commerce by limiting the market for baseload power plants with high emissions and by undermining the uniformity of laws. However, California could rebut these challenges by arguing that (1) burdens imposed on out-of-state baseload power plants with high emissions are no higher than the burdens on their in-state counterparts and (2) the lack of uniformity does not limit interstate commerce in electricity. Regardless of the merit of these arguments, the move to a regional ISO would not strengthen them because the applicability of the law will not change and long-term bilateral contracting will continue to be handled outside of the CAISO markets. Moreover, California could continue to defend the EPS by highlighting the law’s local benefits. Such benefits could draw on the goals mentioned in the law’s legislative findings and declarations, including the need to reduce the exposure of California consumers to “future pollution-control costs” and “future reliability problems in electricity supplies”²⁰⁹ as well as the desire to address climate change, which “will have serious adverse consequences on the economy, health, and environment of California.”²¹⁰ Since the law addresses bilateral contracts that operate independently of CAISO’s markets, enhanced regional grid integration would not alter California’s ability to defend the EPS based on these local benefits.

The third and final test under the dormant Commerce Clause is the extraterritoriality test. Under this test, state laws are invalid if they apply “to commerce that takes place wholly outside of the State’s borders, whether or not the commerce has effects within the state.”²¹¹ This is another possible basis for a dormant Commerce Clause challenge to the EPS. Indeed, a federal district court and one federal appellate judge found that a somewhat similar Minnesota policy was invalid because it legislated extraterritorially.²¹² Under this theory, an opponent of the EPS could argue that it is unconstitutional because it regulates the terms on which out-of-state baseload generators can operate if they want to be able to enter into a long-term contract with a company that serves customers in California and these terms may somehow influence their sales to parties outside of California.

However, there are many ways in which California’s EPS is on stronger legal grounds than the Minnesota law that was struck down in *North Dakota v. Heydinger*. Minnesota’s Next Generation Energy Act said that “no person shall: (1) construct within the state a new large energy facility that would contribute to statewide power sector carbon dioxide emissions; (2)

²⁰⁸ *Pike v. Bruce Church, Inc.*, 397 U.S. 137, 142 (1970).

²⁰⁹ S.B. 598 §§ 1(i)-(j) (2006).

²¹⁰ S.B. 598 § 1(a) (2006).

²¹¹ *Edgar v. MITE Corp.*, 457 U.S. 624, 642-43 (1982).

²¹² *North Dakota v. Heydinger*, 825 F.3d 912 (8th Cir. 2016).

import or commit to import from outside the state power from a large energy facility that would contribute to statewide power sector carbon dioxide emissions; or (3) enter into a new long-term power purchase agreement that would increase statewide power sector carbon dioxide emissions.”²¹³ While all three of the judges on the Eighth Circuit panel that decided *Heydinger* agreed that the Minnesota law was invalid, they disagreed on the reasoning. Judge James B. Loken agreed with the district court that the law violated the Commerce Clause’s extraterritoriality doctrine, while Judge Diana E. Murphy argued that it was preempted by the FPA, and Judge Steven M. Colloton found that it was preempted by the Clean Air Act.

One important distinction between *Heydinger* and any potential challenge to California’s EPS is the nature of the extraterritoriality test that would be used. Judge Loken’s opinion rejected the contention that the extraterritoriality doctrine should be limited to price-control and price-affirmation laws.²¹⁴ However, both the Ninth Circuit—which covers California—and the Tenth Circuit *have* recognized such a limit.²¹⁵ As discussed above in Part II.C.3, this limitation represents a significant narrowing of the extraterritoriality doctrine. If a dormant Commerce Clause challenge to the EPS were raised in the Ninth or Tenth Circuits, California would be able to argue that its law is not extraterritorial because it addresses only the emissions standards for baseload plants that wish to enter into long-term contracts with California utilities; it does not set prices. This argument is based on the terms of the statute and would not change based on whether CAISO becomes a regional ISO.

The specific language of the California EPS statute also presents an important opportunity to distinguish *Heydinger*. Judge Loken found that the Minnesota law regulated “activity and transactions taking place *wholly outside* of Minnesota” because the law applied to any “person” who imported electricity and the physics of the grid mean that out-of-state generators “cannot prevent energy they place in the MISO grid to serve *non*-Minnesota customers from being imported into Minnesota.”²¹⁶ By contrast, the California law applies only to utilities serving California customers, not to “all persons,” as the ill-fated Minnesota law did.²¹⁷ The California law’s limitations on long-term investments to serve Californians do not affect transactions involving only parties and activities outside of the state. Because the California statute is more narrowly tailored in terms of the parties on whom it imposes restrictions, it is less vulnerable to

²¹³ *Id.* at 913.

²¹⁴ *Id.* at 919 (Loken, J.).

²¹⁵ *Association des Eleveurs de Canards et D’oies du Quebec v. Harris*, 729 F.3d 937, 951 (9th Cir. 2013); *Energy & Env’t. Legal Inst. v. Epel*, 793 F.3d 1169, 1175 (10th Cir. 2015).

²¹⁶ *North Dakota v. Heydinger*, 825 F.3d 912, 921 (8th Cir. 2016) (Loken, J.). While the reference to the MISO grid may initially create the impression that Minnesota’s status as part of a multi-state RTO was a factor, the same logic could be applied to the Western Interconnection as a whole. Thus the fact that CAISO is currently a single-state ISO would not be a point of distinction.

²¹⁷ See Cal. Pub. Utils. Code §8341(a) (West 2017) (“No load-serving entity or local publicly owned electric utility may enter into a long-term financial commitment unless any baseload generation supplied under the long-term financial commitment complies with the greenhouse gases emission performance standard”); Allison Clements & Miles Farmer, *California Clean Energy Laws Do Not Violate Commerce Clause*, NRDC (June 29, 2016), <https://www.nrdc.org/experts/allison-clements/california-clean-energy-laws-do-not-violate-commerce-clause>.

dormant Commerce Clause challenges. Since this argument is tied to the text of the statute, California's ability to rely on it would not be affected by enhanced regional grid integration.

Additionally, one of the other judges on the Eighth Circuit panel, Judge Murphy, pushed back against Judge Loken's understanding of electricity imports, arguing that electrons do not actually "flow" over the grid but rather act as part of "an undifferentiated electromagnetic wave."²¹⁸ Based on this understanding, Judge Murphy concluded that the import provision applied only to bilateral contracts, not all transfers over the MISO grid.²¹⁹ While the wording of the California law should be sufficient to distinguish it from the Minnesota program, this is another argument that California could muster in defense of the EPS. Given that this argument is based on the basic physics of the electric grid, California would be able to make this argument regardless of whether CAISO remains a single-state ISO or becomes a multi-state ISO.

In addition to potential dormant Commerce Clause challenges, California's EPS could also be challenged based on the Supremacy Clause. Such a challenge would argue that the EPS conflicts with and is therefore preempted by a federal law, such as the FPA. While the FPA gives FERC authority over the transmission and wholesale sales of electricity in interstate commerce, states retain power "over facilities used for the generation of electric energy."²²⁰ Decisions regarding the mix of generation that in-state utilities must procure are squarely within the traditional realm of state jurisdiction under the FPA.²²¹ Indeed, in its most recent decision on preemption issues under the Federal Power Act, *Hughes v. Talen Energy Marketing*, the Supreme Court emphasized that "Nothing in this opinion should be read to foreclose Maryland and other States from encouraging production of new or clean generation through measures 'untethered to a generator's wholesale market participation.'"²²² California could defend its EPS law by arguing that it is a valid exercise of state authority over generation, a power reserved to the states by the FPA. Since the EPS does not tie long-term contracts to wholesale market participation, it does not raise the same preemption concerns as the policy at issue in *Hughes*. CAISO's transformation into a multi-state ISO would not affect the contours of this argument. As part of the Western Interconnection, California's grid is already subject to FERC jurisdiction under the FPA. But the statutory limits on such jurisdiction and the powers reserved to the states under the statute will not change due to enhanced regional grid integration.

²¹⁸ 825 F.3d 912, at 924 (Murphy, J., concurring in part and concurring in the judgment).

²¹⁹ *Id.* at 925 (Murphy, J., concurring in part and concurring in the judgment).

²²⁰ 16 U.S.C. § 824(b)(1) (2012).

²²¹ See *S. Cal. Edison Co.*, 70 FERC ¶ 61,215, at 61,676 (1995) ("[W]e acknowledge California's ability under its authorities over the electric utilities subject to its jurisdiction to favor particular generation technologies over others. We respect the fact that resource planning and resource decisions are the prerogative of state commissions and that states may wish to diversify their generation mix to meet environmental goals in a variety of ways."); Steven Ferrey, *Sustainable Energy, Environmental Policy, and States' Rights: Discerning the Energy Future Through the Eye of the Dormant Commerce Clause*, 12 N.Y.U. Envtl. L.J. 507, 628 ("It is clear that states may regulate the mix of generating/efficiency resources that regulated utilities must procure.").

²²² *Hughes v. Talen Energy Mktg., LLC*, 136 S. Ct. 1288, 1299 (2016) (quoting Brief for Respondents 40).

Heydinger provides clues as to what a Supremacy Clause challenge to the California EPS might look like but is ultimately distinguishable. In that case, the plaintiffs argued that the Minnesota law was preempted by both the Federal Power Act²²³ and the federal Clean Air Act.²²⁴ While the district court and Judge Loken decided the case on dormant Commerce Clause grounds, the two other judges on the Eighth Circuit panel held it invalid on Supremacy Clause grounds.²²⁵ Judge Murphy held that the law was preempted by the Federal Power Act because by banning “contracts for power from new large power plants, it thus bans wholesale sales of electric energy in interstate commerce.”²²⁶ Recall however, that the Minnesota law was worded quite broadly, declaring that “no person shall ... import or commit to import from outside the state power from a large energy facility that would contribute to statewide power sector carbon dioxide emissions.”²²⁷ By contrast, the California law is limited to long-term contracts involving companies that serve California consumers. It does not, therefore, “ban[] wholesale sales of electric energy in interstate commerce” but rather sets limits on the long-term procurement decisions of in-state utilities, an action that is consistent with state authority under the FPA. This argument—based on the statutory language of the EPS and the FPA—would not be affected by the shift to a multi-state ISO.

3. Carbon Cap-and-Trade Program

a. Existing Policy

The Global Warming Solutions Act (GWSA) of 2006, or AB 32, establishes a statewide target to reduce greenhouse gas (GHG) emissions to 1990 levels by 2020. The law was created to reduce California’s contribution to climate change through economy-wide reductions in GHG emissions. AB 32 states, “Global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California.” The state is currently on track to achieve the emission reduction goal for 2020, and in 2016 the goal was amended, committing California to reduce emissions 40 percent below 1990 levels by 2030.²²⁸

AB 32 requires the California Air Resources Board (CARB) to find “the maximum technologically feasible and cost-effective greenhouse gas emission reductions.”²²⁹ One strategy that CARB

²²³ Amended Complaint for Declaratory and Injunctive Relief at para. 104-118, *North Dakota v. Heydinger*, 15 F. Supp. 3d 891 (D. Minn. 2014).

²²⁴ *Id.* at para. 99-103.

²²⁵ *North Dakota v. Heydinger*, 825 F.3d 912 (8th Cir. 2016). Since this memo focuses on preemption under the Federal Power Act, it will not examine Judge Colloton’s opinion, which found that the law was preempted by the Clean Air Act. However, the general conclusion of this paper also applies to Clean Air Act preemption claims: California is already subject to the Clean Air Act, so the potential for preemption under that law will not increase with a move to a regional ISO.

²²⁶ *Id.* at 926 (Murphy, J., concurring in part and concurring in the judgment).

²²⁷ *Id.* at 913 (Loken, J.).

²²⁸ S.B. 32 (2006).

²²⁹ A.B. 32 (2006).

employs to meet the ambitious goals of AB 32 is a cap-and-trade program, which launched in 2012.²³⁰

The cap-and-trade program encompasses all electricity generators inside the state, all importers of electricity to California, and all industrial sources that emit 25,000 metric tons of carbon dioxide equivalent or more annually.²³¹ As of 2015, distributors of transportation fuel, natural gas, and other fuels are also subject to the program, which now covers approximately 85% of California's total GHG emissions.²³² The program sets a maximum cap for statewide GHG emissions and allows entities to sell off allowances or permits they do not need. Entities can meet their obligations by purchasing offsets and the carbon price is driven by allowance trading. Each year the number of allowances is reduced, effectively lowering the level of emissions. The program is managed and regulated by CARB.²³³

Some argue that cap-and-trade has led to 'leakage' of emissions as utilities divest from non-conforming energy generating units and reinvest in lower emissions alternatives, without retiring the higher emissions plants.²³⁴ These emissions, otherwise known as "secondary emissions," result from electricity generated to meet demand that may not have been generated if not for the generation of cleaner energy serving California's load.²³⁵ CAISO does track secondary emissions and it is currently developing a protocol to measure these emissions that result from the energy imbalance market (EIM).

Overall, cap-and-trade has succeeded in limiting GHG emissions, and regulators are confident²³⁶ that covered entities will be able to reduce their emissions to 334 million metric tons in 2020, a reduction of 15% from 2015 levels.²³⁷ Since the cap-and-trade program is set to expire after 2020, the legislature is currently reviewing proposals for how to structure it after that date.

²³⁰ *Cap-and-Trade Program*, Cal. Air Resources Bd. (Mar. 22, 2017), <https://www.arb.ca.gov/cc/capandtrade/capandtrade.htm>.

²³¹ Anne E. Carlson & William Boyd, *Evaluation of Jurisdictional and Constitutional Issues Arising from CAISO Expansion to include PacifiCorp Assets*, Cal. Indep. Sys. Operator Corp. (Aug. 1, 2016), http://docketpublic.energy.ca.gov/PublicDocuments/16-RGO-01/TN212588_20160802T154524_Stacey_Crowley_Comments_Evaluation_of_Legal_Issues_Arising_from.pdf.

²³² *California Cap and Trade*, Ctr. for Climate & Energy Solutions (Mar. 15, 2017), <https://www.c2es.org/us-states-regions/key-legislation/california-cap-trade#Details>.

²³³ *Cap-and-Trade Regulation Instructional Guidance*. Cal. Air Resources Bd. (Sept. 2012), <https://www.arb.ca.gov/cc/capandtrade/guidance/chapter1.pdf>.

²³⁴ Danny Cullenward, *Leakage in California's Carbon Market*, 27 *Electricity J.* 36 (2014).

²³⁵ *Greenhouse Gas Emission Tracking Report: FAQ*, Cal. Indep. Sys. Operator Corp. (Dec. 28, 2016), <https://www.aiso.com/Documents/GreenhouseGasEmissionsTrackingReport-FrequentlyAskedQuestions.pdf>.

²³⁶ Michael Hiltzik, *California's Cap-and-Trade Program Has Cut Pollution. So Why Do Critics Keep Calling it a Failure?*, L.A. Times (July 29, 2016), <http://www.latimes.com/business/hiltzik/la-fi-hiltzik-captrade-20160728-snap-story.html>.

²³⁷ *California Cap and Trade*, Ctr. for Climate & Energy Solutions (Mar. 15, 2017), <https://www.c2es.org/us-states-regions/key-legislation/california-cap-trade#Details>.

b. Policy Analysis

The shift to regional Western wholesale electricity markets would not interfere with California's cap-and-trade program, and if anything, it would strengthen it. **As previously mentioned, enhanced Western grid integration would reduce renewable energy curtailment and allow for the addition of more renewable energy resources, thereby reducing emissions and making it easier for industry to comply with the cap-and-trade program.** Although California is on track to achieve the target of reducing emissions to 1990 levels by 2020, reducing emissions 40% further by 2030 will be more challenging. Enhanced grid integration would make reaching that goal much easier.

A recent study predicts that by 2030, a shift to an integrated Western grid would allow California to decrease emissions by an additional 4-5 million tons (8% to 10% of total electric generation emissions) than it otherwise would if no such shift occurs. **In addition, California would achieve a 55% to 60% emission reduction from 1990 levels as soon as 2030.**²³⁸

Since enhanced grid integration increases transparency, it can improve the accuracy of emissions accounting. As of July 2016, California imports roughly 40,000 GWh annually (13.5% of energy used) of electricity combined from the Southwest and Northwest that are currently designated as coming from 'Unspecified Sources' meaning the CEC does not know the source.²³⁹ For purposes of the carbon cap-and-trade program, these unknown sources are assigned an emissions factor equivalent to that of an average natural gas combined cycle plant. With enhanced Western grid integration, the sources would no longer be unspecified, and the CAISO could therefore more accurately calculate the emissions that result from the state's electricity demand.

The existing CAISO EIM currently spans eight states and successfully accommodates policy discrepancies among states, including California's cap-and-trade program.²⁴⁰ To accommodate the requirements stipulated under cap-and-trade, CAISO is developing a methodology to account for secondary emissions from the EIM.²⁴¹ The methodology established for the EIM to account for GHG emissions is being considered for the expanded day-ahead market that would be a component of the enhanced regional market. If the accounting methodology for the EIM can conduct complex calculations to track primary and secondary emissions for the real-time

²³⁸ *SB 350 Study: The Impacts of a Regional ISO-Operated Power Market on California*, Cal. Indep. Sys. Operator Corp. et al. (July 26, 2016), https://www.aiso.com/Documents/Presentation-SenateBill350Study-Jul26_2016.pdf.

²³⁹ *QFER CEC-1304 Power Plant Owner Reporting Database*, Cal. Energy Comm'n. (Aug. 19, 2016), http://www.energy.ca.gov/almanac/electricity_data/web_qfer/.

²⁴⁰ *Proposed Principles for Governance of a Regional ISO*, Cal. Indep. Sys. Operator Corp. (June 9, 2016), <http://www.aiso.com/Documents/ProposedPrinciples-Governance-RegionalISO.pdf>.

²⁴¹ *Greenhouse Gas Emission Tracking Report FAQs*, Cal. Indep. Sys. Operator Corp. (Dec. 28, 2016), <https://www.aiso.com/Documents/GreenhouseGasEmissionsTrackingReport-FrequentlyAskedQuestions.pdf>

market, effectively running twice in five minutes, then it should be applicable for the day-ahead market which involves unit commitments in the hour.²⁴²

Since electricity is imported into California from other states, CARB adopted a policy to impose a charge on imports, called a greenhouse gas emissions adder, intended to level-out the price discrepancy for in-state generators that are subject to the state cap. Every day, CAISO determines the greenhouse gas bid adder for each EIM participant.²⁴³ Electricity generators from inside and outside of California include the GHG compliance costs²⁴⁴ within their day-ahead and real-time market bids, and CAISO selects the least-cost dispatch available. CAISO relies on the carbon market price to determine the dispatch order and price of electricity imported from outside California.²⁴⁵ If the EIM participating resource does not include an emissions bid adder, it sends a signal to CAISO not to include the generation for delivery into the CAISO balancing authority area.²⁴⁶

c. Legal analysis

While California's treatment of rules for electricity imports under its cap-and-trade program might face dormant Commerce Clause and preemption challenges, the force of those challenges would not change with regional expansion of CAISO.

California's cap-and-trade program has already been the target of a number of legal challenges, but none to date have focused on potential dormant Commerce Clause or Supremacy Clause violations.²⁴⁷ The Northeast's Regional Greenhouse Gas Initiative has also faced legal

²⁴² Interview with Phil Pettingill, Dir. of State Regulatory Affairs, Cal. Indep. Sys. Operator Corp., in Folsom, Cal. (Mar. 20, 2017).

²⁴³ *California Independent System Operator Corporation Fifth Replacement FERC Electric Tariff*, Cal. Indep. Sys. Operator Corp. § 29.32 (Feb. 1, 2017), https://www.aiso.com/Documents/ConformedTariff_asof_Mar6_2017.pdf (describing the function and application of the CAISO GHG Bid Adder).

²⁴⁴ The compliance cost is calculated based on the EIM resource's highest incremental heat rate and emission rate in the EIM, the applicable Greenhouse Gas Allowance Price, and with respect to bids at EIM External Interties, and the carbon dioxide equivalent emission rate of the resource with the highest such rate in the WECC region and the applicable Greenhouse Gas Allowance Price index. *California Independent System Operator Corporation Fifth Replacement FERC Electric Tariff*, Cal. Indep. Sys. Operator Corp. § 29.32 (Feb. 1, 2017), https://www.aiso.com/Documents/ConformedTariff_asof_Mar6_2017.pdf (describing the function and application of the CAISO GHG Bid Adder).

²⁴⁵ Danny Cullenward & Andy Coghlan, *Structural Oversupply and Credibility in California's Carbon Market*, 29 *Electricity J.* 7 (2016).

²⁴⁶ *California Independent System Operator Corporation Fifth Replacement FERC Electric Tariff*, Cal. Indep. Sys. Operator Corp. § 29.32 (Feb. 1, 2017), https://www.aiso.com/Documents/ConformedTariff_asof_Mar6_2017.pdf (describing the function and application of the CAISO GHG Bid Adder).

²⁴⁷ See *Ass'n of Irrigated Residents v. State Air Res. Bd.*, 206 Cal. App. 4th 1487, 1489 (Cal. Ct. App. 2012) (state law procedural challenge to scoping); *Morning Star Packing Co. v. Cal. Air Res. Bd.*, No. 34-2013-80001464, 2013 Cal. Super. LEXIS 169 (Cal. Super. Ct. Dec. 20, 2013) (joint ruling also applying to *Cal. Chamber of Commerce v. Cal. Air Res. Bd.*, No. 34-2012-80001313, 2013 Cal. Super. LEXIS 1798

challenges, some of which touched on federal constitutional issues. A 2009 complaint alleging preemption under the Public Utility Regulatory Policies Act and FERC regulations and violations of the interstate compact clause was settled by New York²⁴⁸ while a more recent complaint claiming violations of the interstate commerce clause was dismissed on procedural grounds.²⁴⁹

While some scholars have argued that California's cap-and-trade program is vulnerable to dormant Commerce Clause challenges,²⁵⁰ these arguments have not yet been litigated. However, the key inquiries in such a challenge would be whether the California law (1) is discriminatory, (2) excessively burdens interstate commerce, or (3) is impermissible extraterritorial legislation. **Regional expansion of CAISO will not change the analysis under any of these tests.**

Under the first dormant Commerce Clause inquiry, laws that discriminate against interstate commerce face strict scrutiny and are invalid unless the state shows that they "advance[] a legitimate local purpose that cannot be adequately served by reasonable nondiscriminatory alternatives."²⁵¹ California's cap-and-trade program imposes obligations on all "first deliverers of electricity," which includes both generating facilities "located in California" and "[e]lectricity importers."²⁵² The regulatory scheme also prohibits resource shuffling²⁵³ and requires imports to meet certain standards in order to qualify as coming from a specified source.²⁵⁴ The program should be safe from challenges based on discrimination grounds since the goal of these

(Cal. Super. Ct. Nov. 12, 2013)) (challenging CARB's authority under state law); *Citizens Climate Lobby & Our Children's Earth Found. v. Cal. Air Res. Bd.*, No. CGC-12-5195944, 2013 Cal. Super. LEXIS 7820 (Cal. Sup. Ct. Mar. 25, 2013) (challenging additionality rules).

²⁴⁸ Steven Ferrey, *Courts Cap the "Trade": Regulation of Competitive Markets When Courts Overtake State and Federal Cap-and-Trade Regulation*, 117 W. Va. L. Rev. 681, 718 (2014); InDeck Coringht, L.P. v. Paterson, <http://www.lawandenvironment.com/uploads/file/InDeck%20Complaint.pdf>. The complaint also alleged violations of the interstate compact clause and of plaintiff's due process and equal protection rights.

²⁴⁹ *Thrun v. Cuomo*, 112 A.D.3d 1038 (2013).

²⁵⁰ See, e.g., Thomas Alcorn, *The Constitutionality of California's Cap-and-Trade Program and REcommendations for Design of Future State Programs*, 3 Mich. J. Envtl. & Admin. L. 87, 176-77 (2013) ("While California's regulations are ideal from a regulatory standpoint, it is unlikely that a court will uphold all of them in their current form."); James W. Coleman, *Importing Energy, Exporting Regulation*, 83 Fordham L. Rev. 1357, 1384 (2014) (arguing that because the cap-and-trade program "appl[ies] to emissions in the supply chain of electricity ... under conventional dormant Commerce Clause doctrine these exported regulations will remain in legal jeopardy"); but see Erin Parlar et al., *Legal Issues in Regulating Imports in State and Regional Cap and Trade Programs*, Colum. L. Sch. Ctr. for Climate change L. 54 (Oct. 2012), <http://wordpress.ei.columbia.edu/climate-change-law/files/2016/06/Parlar-et-al.-2012-10-Imports-in-StateRegional-Cap-and-Trade.pdf> ("Based on our analysis of the dormant Commerce Clause and the FPA, we believe that the imports regulations are likely to ultimately be ruled constitutional by a reviewing court.")

²⁵¹ *Ore. Waste Sys., Inc. v. Dep't of Envtl. Quality of Ore.*, 511 U.S. 93, 101 (1994) (quoting *New Energy Co. of Ind. v. Limbach*, 486 U.S. 269 (1988)).

²⁵² Cal. Code Regs. tit. 17, § 95811 (West 2017).

²⁵³ Cal. Code Regs. tit. 17, § 95852(b)(2) (West 2017).

²⁵⁴ Cal. Code Regs. tit. 17, § 95852(b)(1)(C) (West 2017).

provisions is to treat out-of-state resources on the same terms as in-state resources.²⁵⁵ Since this defense is based on the structure and purpose of the law, it will not be weakened if CAISO becomes a regional ISO.

One set of cases that may be relevant to potential legal challenges to the cap-and-trade program are those involving low-carbon fuel standards (LCFSs). Although not aimed at electricity generators, these laws also assess the carbon intensity of energy used by in-state consumers and in the process effectively set standards for out-of-state energy sources that want to be able to sell to California consumers. Both the Ninth Circuit and the federal district court for Oregon have rejected challenges to low-carbon fuel standards based on the Commerce Clause and the Supremacy Clause.²⁵⁶ The Ninth Circuit held that California's LCFS was not discriminatory merely because it "assign[ed] different carbon intensity to ethanol from different regions."²⁵⁷ The court said that "if an out-of-state ethanol pathway does impose higher costs on California by virtue of its greater GHG emissions, there is a nondiscriminatory reason for its higher carbon intensity value."²⁵⁸ This line of reasoning may be valuable in defending the treatment of imports in California's cap-and-trade program. Although imports face different requirements than in-state resources, there is a nondiscriminatory reason for such a disparity (i.e., the desire to treat imports in a way that captures the true carbon intensity of out-of-state resources). Importantly, this frame of analysis focuses on the rationale for the treatment of out-of-state resources, which would not be affected by CAISO's regional expansion.

If a court agrees that the cap-and-trade program does not discriminate against interstate commerce, the law could still be challenged under the *Pike* test, which asks whether "the burden imposed on [interstate] commerce is clearly excessive in relation to the putative local benefits."²⁵⁹ Opponents of the cap-and-trade program could argue that it burdens interstate commerce by making it more difficult to sell power into California and undermines uniformity of state laws. However, it is important to keep in mind that since California is already physically integrated into the Western Interconnection's regional grid, electricity sales into and within the state are already transactions in interstate commerce, so the *Pike* inquiry regarding burdens on interstate commerce would not change with the creation of a regional ISO. Similarly, the lack of uniformity in state laws would not become a more legally significant problem merely because of enhanced regional grid integration. The fact that only two of the 13 PJM states (Delaware and Maryland) are members of the Regional Greenhouse Gas Initiative shows that a cap-and-trade market can work even when a state is part of a multi-state ISO in which other states are not participants in its carbon market. Additionally, California would be able to defend its law by pointing to the local benefits of the law. As the legislature noted when it enacted A.B. 32, "[g]lobal warming poses a serious threat to the economic well-being, public health, natural

²⁵⁵ See Erin Parlar, Micahel Babakitis & Shelley Welton, *Legal Issues in Regulating Imports in State and Regional Cap and Trade Programs*, Colum. L. School Ctr. for Climate Change L. 29-37 (Oct. 2012).

²⁵⁶ *Rocky Mountain Farmers Union v. Corey*, 730 F.3d 1070 (9th Cir. 2013); *Am. Fuel & Petrochemical Mfgs. v. O'Keeffe*, 134 F. Supp. 3d 1270 (D. Ore. 2015).

²⁵⁷ *Rocky Mountain Farmers Union v. Corey*, 730 F.3d 1070, 1089 (9th Cir. 2013).

²⁵⁸ *Id.* at 1089-90.

²⁵⁹ *Pike v. Bruce Church, Inc.*, 397 U.S. 137, 142 (1970).

resources, and the environment of California.”²⁶⁰ California could argue that the program’s local benefits in avoiding or mitigating the harms associated with climate change outweigh any incidental burdens on interstate commerce. California’s ability to make this argument does not depend on CAISO remaining a single-state ISO.

The final dormant Commerce Clause inquiry focuses on whether the law is improperly extraterritorial in that it applies “to commerce that takes place wholly outside of the State’s borders, whether or not the commerce has effects within the state.”²⁶¹ However, as discussed above, the Ninth and Tenth Circuit have adopted a narrow version of this extraterritoriality test, holding that laws will only be struck down as extraterritorial if they set prices or tie in-state prices to out-of-state prices.²⁶² The cap-and-trade program limits carbon emissions; it does not set the price of electricity. Any prices that out-of-state generators must bear in order to purchase allowances are only incurred if they choose to sell into the California market. As such, the program does not set prices for exclusively out-of-state transactions and is not vulnerable under the extraterritoriality test as it is applied in the Ninth and Tenth Circuit. This fundamental characteristic of the cap-and-trade program would not change with regional expansion of CAISO.

In addition to possible dormant Commerce Clause challenges, California’s cap-and-trade program could face suits under the Supremacy Clause. Such suits could argue that the state program conflicts with and is therefore preempted by a federal law like the Federal Power Act.²⁶³ Opponents of the law could argue that by putting a price on greenhouse gas emissions, for instance, the cap-and-trade program influences wholesale electricity rates, which are the exclusive province of FERC jurisdiction. However, the Supreme Court has recently stated that in energy law preemption cases, courts must consider “the *target* at which the state law *aims* in determining whether that law is preempted.”²⁶⁴ The target at which the California cap-and-trade program aims is clearly greenhouse gas emissions, not wholesale electricity rates. This analysis would not change with enhanced regional grid integration. Nor does the cap-and-trade program link emissions credit prices to wholesale rates. **Moreover, and most significantly for the purpose of this analysis, California’s grid is already subject to FERC jurisdiction since its position in the Western Interconnection means that transmission and wholesale sales in California are already part of interstate commerce. Thus, the strength of potential Federal Power Act preemption challenges would not be affected by the decision to shift to a regional ISO.**

²⁶⁰ Cal. Health & Safety Code § 38501(a) (West 2017).

²⁶¹ Edgar v. MITE Corp., 457 U.S. 624, 642-43 (1982).

²⁶² Association des Eleveurs de Canards et D’oies du Quebec v. Harris, 729 F.3d 937, 951 (9th Cir. 2013) (quoting Pharm. Research & Mfrs. of Am. v. Walsh, 538 U.S. 644, 669 (2003)); Energy & Env’t. Legal Inst. v. Epel, 793 F.3d 1169, 1175 (10th Cir. 2015).

²⁶³ The law could also face a preemption challenge under other federal laws, such as the Clean Air Act. While this paper focuses on preemption issues under the Federal Power Act, it is worth noting that California is already subject to the Clean Air Act and that would not change with a move to a regional ISO.

²⁶⁴ Oneok, Inc. v. Learjet, Inc., 135 S. Ct. 1591, 1599 (2015).

B. Benefits from Enhanced Grid Integration

1. Cost Savings

Studies show many financial benefits associated with improved regional grid integration due to a competitive electricity market, resource sharing and avoided redundancy, less curtailment of renewable energy resources, and reduced capital investments related to Renewable Portfolio Standard (RPS) compliance.

A recent study titled, “Senate Bill 350 Study: The Impacts of a Regional ISO-Operated Power Market on California” estimates that **California utility customers could save between \$1 billion to \$1.5 billion annually by 2030 from enhanced grid integration, which represents between 2% to 3% of all retail electricity sales in California.**²⁶⁵ The estimated annual savings by 2030 are attributed to the following sources: a reduction in renewable energy investment expenditures (\$800 million); a reduction in costs related to the production, purchase, and sale of wholesale power (\$543 million); a reduction in generation capacity costs to meet planning reserve requirements (\$120 million); and a reduction in CAISO’s annual operating costs (\$103 million).²⁶⁶

If California increases its 2030 RPS goal from 50% to 60%, the estimated annual savings would increase to from \$1.5 billion to \$2.8 billion for California utility customers.²⁶⁷ This significant benefit increase is primarily driven by the excess renewable energy capacity investments necessary to meet the 60% RPS in a “business as usual” scenario.

Generation capacity costs will decrease with integration because the need for excess capacity shrinks as wider geographies are covered by a single system operator. This can reduce the charge needed to recover grid management costs and meet resource adequacy needs.²⁶⁸ For example, the aforementioned study found that enhanced grid integration would allow California to reduce its own capacity requirements by 1,594 MW, which alone could save approximately \$120 million annually.²⁶⁹

It is important to recognize that these substantial cost savings are likely to be considerably greater. The authors of the study acknowledge that their modeling assumptions “tend to

²⁶⁵ *SB 350 Study: The Impacts of a Regional ISO-Operated Power Market on California*, Cal. Indep. Sys. Operator Corp. et al. (July 8, 2016), https://www.aiso.com/Documents/SB350Study_AggregatedReport.pdf.

²⁶⁶ *Id.*

²⁶⁷ *SB 350 Study: The Impacts of a Regional ISO-Operated Power Market on California*, Cal. Indep. Sys. Operator Corp. et al. (July 26, 2016), https://www.aiso.com/Documents/Presentation-SenateBill350Study-Jul26_2016.pdf.

²⁶⁸ *Senate Bill 350 Study Volume VII: Ratepayer Impact Analysis*, Cal. Indep. Sys. Operator et al. (July 8, 2016), <http://www.aiso.com/Documents/SB350Study-Volume7RatepayerImpactAnalysis.pdf>.

²⁶⁹ *Id.*

understate the potential benefits of a regional market.”²⁷⁰ The modelers assumed load demand would shift to daylight hours (when solar generation and renewable curtailment is high) through time-of-use retail electricity rates and daytime charging of five million electric vehicles with access to workplace charging stations. They also assumed that costly pumped storage would be built to facilitate renewable integration and that out-of-state renewable capacity would be capped at 6,000 MW, among other assumptions.²⁷¹ These conservative assumptions underestimate the benefits of enhanced grid integration because they result in unrealistically low costs in the “business as usual” scenario. In all likelihood, the benefits of a Western integrated grid would be considerably greater if the modelers adjusted these assumptions.

2. Integrating Renewable Energy Resources

Enhanced grid integration is expected to support California’s renewable energy industry by enabling California to sell excess renewable energy in a regional market.²⁷² Currently if California generates excess energy that cannot be sold through the EIM, it has to be shut-down or “curtailed.” In January 2017, over 40,000 MWhs of California renewables were curtailed, an increase of more than five times the amount curtailed the previous January.²⁷³ As renewable energy generation increases, curtailment is only expected to continue, and it is estimated that between 6,000 to 8,000 MW of renewable energy capacity will have to be shut-down during some hours in the spring of 2017.²⁷⁴ However, since grid integration opens new markets for demand, curtailment is expected to decrease in 2030 from 4.5% to 1.2%, resulting in a savings of 3,592,000 MWh annually.²⁷⁵ The benefits of avoiding curtailment may be understated in the SB 350 study because the researchers assumed “normal weather, normal hydrology.”²⁷⁶ However, some experts believe that climate change may lead to more extreme weather in California, including rain events that lead to flooding²⁷⁷ and to potentially more must-take hydroelectric generation that forces more solar and wind curtailment.

²⁷⁰ Arne Olson et al., *Senate Bill 350 Study: Volume IV: Renewable Energy Portfolio Analysis*, Energy & Env’tl. Econ., Inc. (July 8, 2016), <https://www.cao.com/Documents/SB350Study-Volume4RenewableEnergyPortfolioAnalysis.pdf>.

²⁷¹ *Id.*

²⁷² James L. Sweeney, *Integrate Western Power Grid to Reduce Emissions, Energy Costs*, Sacramento Bee (Mar. 3, 2017), <http://www.sacbee.com/opinion/op-ed/soapbox/article135866278.html>.

²⁷³ *Market Performance Report: January 2017*, Cal. Indep. Sys. Operator Corp. (Feb. 28, 2017), <http://www.cao.com/Documents/MarketPerformanceReportforJan2017.pdf>.

²⁷⁴ Jeff St. John, *California’s Flood of Green Energy Could Drive a Record 8GW of Curtailment This Spring*, Greentech Media (Mar. 21, 2017), <https://www.greentechmedia.com/articles/read/californias-flood-of-green-energy-could-drive-a-record-6-to-8-gigawatts-of>.

²⁷⁵ Arne Olson et al., *Senate Bill 350 Study: Volume IV: Renewable Energy Portfolio Analysis*, Energy & Env’tl. Econ., Inc. (July 8, 2016), <https://www.cao.com/Documents/SB350Study-Volume4RenewableEnergyPortfolioAnalysis.pdf>.

²⁷⁶ *Id.*

²⁷⁷ Lauren Sommer, *With Climate Change, California Is Likely To See More Extreme Flooding*, Nat’l Pub. Radio (Feb. 28, 2017), <http://www.npr.org/2017/02/28/517495739/with-climate-change-california-is-likely-to-see-more-extreme-flooding>.

By facilitating regionally planned transmission lines, enhanced grid integration can help integrate disperse renewable energy generation at the least cost.²⁷⁸ This is important for connecting wind resources in states such as Wyoming with load centers in California and throughout the West. In addition, because enhanced grid integration increases geographic diversity and decreases aggregate wind variability and the frequency of extremes, wind energy becomes more economically valuable.²⁷⁹ A study by Lawrence Berkeley National Laboratory (LBNL), found that in a regional market the marginal value of wind increased rapidly as new wind capacity was built in geographically diverse locations because the variability of the aggregate wind generation was minimized.²⁸⁰ If California increases its RPS standard, geographic diversity made possible by enhanced grid integration would allow the state to meet the higher goal more reliably and cost-effectively.

The additional renewable energy generation across the WECC can achieve a substantial reduction in greenhouse gas emissions. **By 2030, California would reduce its annual emissions by 4.6 million metric tons of carbon dioxide due to enhanced grid integration, representing a 10% reduction of total electricity sector emissions (in 2030).²⁸¹ Across the Western Interconnection, enhanced grid integration could reduce emissions by 10 to 11 million metric tons per year by 2030, representing a 3.5% decrease in electricity sector emissions.²⁸²**

3. Job Creation

A regional electricity market is estimated to create between 10,000 to 20,000 jobs in California from infrastructure investments—which create both short-term and long-term jobs—and lower electricity prices.²⁸³ The primary driver of job creation would be indirectly gained through lower energy costs. As total retail costs are expected to decline by 2% to 3% than they otherwise would have, this additional capital can be reinvested in the economy.²⁸⁴

²⁷⁸ Patrick Luckow, Tommy Vitolo & Joseph Daniel, *A Solved Problem: Existing Measures Provide Low-Cost Wind and Solar Integration*, Synapse Energy Econ., Inc. (Aug. 25 2015), <http://www.synapse-energy.com/sites/default/files/A-Solved-Problem-15-088.pdf>.

²⁷⁹ EnerNex Corp., *Eastern Wind Integration and Transmission Study*, Nat'l Renewables Energy Laboratory (Feb. 2011), <http://www.nrel.gov/docs/fy11osti/47078.pdf>.

²⁸⁰ Andrew Mills & Ryan Wiser, *Strategies for Mitigating the Reduction in Economic Value of Variable Generation with Increasing Penetration Levels*, Ernest Orlando Lawrence Berkeley Nat'l Laboratory (Mar. 2014), <https://emp.lbl.gov/sites/all/files/lbnl-6590e.pdf>.

²⁸¹ Brattle Grp. et al., *Senate Bill 350 Study: The Impacts of a Regional ISO-Operated Power Market on California*, Cal. Indep. Sys. Operator Corp. (July 8, 2016), https://www.caiso.com/Documents/SB350Study_AggregatedReport.pdf.

²⁸² *Id.*

²⁸³ *Id.*

²⁸⁴ Brattle Grp. et al., *Senate Bill 350 Study: The Impacts of a Regional ISO-Operated Power Market on California*, Cal. Indep. Sys. Operator Corp. (July 8, 2016), https://www.caiso.com/Documents/SB350Study_AggregatedReport.pdf.

IV. Conclusion

The movement toward enhanced regional grid integration is at a critical juncture. California's political leaders can move this project forward by passing legislation that would allow for necessary changes in CAISO's governance structure.

California has implemented a number of statewide policies to advance clean energy and reduce greenhouse gas emissions. Enhanced regional grid integration will help California realize these goals in a cost-effective manner while conferring additional benefits. Achieving California's energy policies without enhanced regional integration will be much more costly. Without it, California will be forced to curtail increasing quantities of renewable energy, which would restrict additional clean energy supply. Expanding the transmission system operator's geographic footprint enables renewable energy supply to meet electricity demand, furthering production, increasing reliability, and cutting costs for utility customers.

Transitioning from a single-state to a multi-state wholesale electricity market will *not* increase the risk that California's clean energy policies face from challenges under the Supremacy Clause and dormant Commerce Clause. Making the necessary changes to allow CAISO to add out-of-state balancing authorities as full-scale members will improve the reliability of the Western grid and will help facilitate cost-effective renewables integration without jeopardizing California's existing clean energy policies.

Acknowledgements

We are grateful for the advice and feedback that we received from John Moore of the Sustainable FERC Project, Julia S. Prochnik, Pat Remick, and Carl Zichella from the Natural Resources Defense Council, Marc D. Joseph from Adams Broadwell Joseph & Cardozo, and Rachele Heunnekens from RALLY. We also grateful to Mary McDonald, Phil Pettingill, and Andrew Ulmer from the California Independent System Operator Corporation for providing background information about how the CAISO system works. All errors are our own.

Contact Information

The authors of this report can be reached by email at juliana.brint@yale.edu, joshua.constantini@yale.edu, franz.hochstrasser@yale.edu, and lucy.kessler@yale.edu.

Appendix B

*Carlson & Boyd, Evaluation of Jurisdictional and Constitutional Issues Arising from CAISO
Expansion to include PacifiCorp Assets (2016)*

Evaluation of Jurisdictional and Constitutional Issues Arising from CAISO Expansion to include PacifiCorp Assets

August 1, 2016

Ann E. Carlson, Shapiro Professor of Environmental Law, UCLA School of Law and
William Boyd, Professor of Law and John H. Schultz Energy Law Fellow, University of
Colorado Law School*

In consultation with **Ethan Elkind**, Director, Climate Change and Business Program,
UC Berkeley and UCLA Schools of Law and **Daniel Farber**, Sho Sato Professor of Law,
UC Berkeley School of Law*

Introduction

The California Independent System Operator (CAISO) has asked us to provide our independent legal assessment of issues that could arise as a result of the potential addition of PacifiCorp as a participating transmission owner in CAISO. More specifically, we have evaluated whether the expansion of CAISO to include the PacifiCorp transmission assets:

- 1) would alter the Federal Energy Regulatory Commission's (FERC's) jurisdiction over CAISO, including FERC's authority to displace California's authority over environmental matters or its ability to affect state policies regarding both the building of generation facilities and the types of resources load serving entities should procure; or
- 2) would raise any concerns about the constitutionality of California environmental and clean energy laws under the Commerce Clause of the United States Constitution.

The straightforward answers to each of these questions are that the inclusion of PacifiCorp assets in CAISO:

- 1) would not alter FERC's jurisdiction and would not displace any existing state authority over environmental matters. CAISO is already subject to FERC jurisdiction and the inclusion of PacifiCorp in CAISO does not change this. FERC does not have jurisdiction over California's energy and environmental policies and this would not change because of the inclusion of PacifiCorp in CAISO;

*The contents of this report contain the views of the individual authors and do not reflect the views of the University of California or the University of Colorado.

- 2) would not alter the constitutionality of California's environmental and clean energy laws under the Commerce Clause of the United States Constitution because the policies are already subject to Commerce Clause scrutiny.

We analyze each of the issues below. Before doing so, we briefly describe CAISO and the proposed expansion to include PacifiCorp's transmission assets. We then describe the interstate nature of California's sources of electricity and the relationship between CAISO and the western regional interconnect, which covers the western United States. We also set forth those California clean energy and climate policies that apply to California's electricity sector.

CAISO currently operates the bulk transmission grid for 80 percent of California and a small part of western Nevada.¹ CAISO is a non-profit public benefit corporation that was established pursuant to AB 1890 in 1996 as part of California's electricity restructuring effort.² It is regulated by FERC as a "public utility" under the Federal Power Act.

In November 2014, CAISO established a real-time energy imbalance market (EIM) that PacifiCorp joined.³ Since that time several other utilities have joined or announced their intention to join the EIM, which now operates across six states in the western United States.

In April 2015, CAISO and PacifiCorp also executed a memorandum of understanding to explore adding PacifiCorp as a full participating transmission owner or PTO in CAISO.⁴ Under such an arrangement, CAISO would assume operational control over the transmission facilities of PacifiCorp, just as it does for its existing PTOs, and would administer these facilities in accordance with its FERC-approved Open Access Transmission Tariff. CAISO also operates day-ahead and real-time wholesale electricity markets as well as an ancillary services market, all according to rules embodied in its FERC-approved tariff.⁵ PTOs that serve end-use customers, a category that would

¹ See California ISO, *The ISO Grid*,

<https://www.aiso.com/about/Pages/OurBusiness/UnderstandingtheISO/The-ISO-grid.aspx>.

² AB 1890, Chapter 854 (approved by Governor, September 23, 1996).

³ The EIM automatically balances supply and demand for electricity every fifteen minutes, dispatching the least-cost resources every 5 minutes. In November 2014, this voluntary energy imbalance market service became available to other grids operating in the West in part as a way to integrate renewable resources across a larger geographic region reliably and efficiently. See CAISO, Energy Imbalance Market (EIM) Overview available at:

<https://www.aiso.com/informed/Pages/EIMOverview/Default.aspx>

⁴ See New Participating Transmission Owner Memorandum of Understanding, (April 13, 2015),

https://www.aiso.com/Documents/NewParticipatingTransmissionOwnerMemorandum_Understanding.pdf.

⁵ Ancillary services are those services necessary to support the transmission of electric power from seller to purchaser, given the obligations of control areas and transmitting utilities within those control areas, to maintain reliable operations of the interconnected transmission system. Ancillary services supplied with generation include load following, reactive power-voltage

include PacifiCorp if it joined CAISO, use these markets to procure the power they need to serve their end-use customers.

Expanding CAISO to include PacifiCorp would mean that PacifiCorp's transmission facilities would be added to the CAISO-controlled grid. This would expand CAISO's footprint into another five western states.⁶ The current CAISO system, as noted, already includes facilities that are outside of California. From a jurisdictional perspective, CAISO's operational control over PacifiCorp's transmission assets would be similar to CAISO's operational control over existing out-of-state facilities. Moreover, the CAISO system itself is connected to the larger regional grid in the western United States (the Western Interconnect). As a result, electric power that flows across the CAISO system already crosses state lines and therefore has and will continue to be traveling in interstate commerce. This is true regardless of whether CAISO operates wholly within the state of California or expands to include transmission facilities in other states.

California has a number of important clean energy and environmental policies that affect its electricity sector. The most relevant policies for purposes of our analysis include:

- The cap-and-trade program that the state's Air Resources Board has adopted as part of its implementation of AB 32, the Global Warming Solutions Act. All electricity generators located in California and all importers of electricity to California who emit 25,000 metric tons of CO₂ equivalent or more annually are included as covered entities under the cap and trade program.⁷
- The Renewable Portfolio Standard (RPS), which requires California's Investor Owned Utilities (IOU) and locally owned utilities to procure 33 percent of their electricity from eligible renewable sources by 2020 and 50 percent by 2030.⁸
- A greenhouse gas "performance standard" that prohibits California utilities from entering into long-term contracts for baseload electricity generation that exceeds a performance standard equivalent to that which can be met by an efficient, combined cycle natural gas plant ("the performance standard").⁹

regulation, system protective services, loss compensation service, system control, load dispatch services, and energy imbalance services. See FERC, Market Oversight Glossary available at: <http://www.ferc.gov/market-oversight/guide/glossary.asp>.

⁶ The five states are Oregon, Washington, Idaho, Utah, and Wyoming. For a map of the assets CAISO would manage with the PacifiCorp expansion, see RTO Insider, *Revised Western RTO Governance Plan Highlights State Authority*, <http://www.rtoinsider.com/wp-content/uploads/CAISO-plus-Pacificorp-Map-CAISO-content-web.jpg> (July 21, 2016).

⁷ See 17 CCR § 95811, 95812(c)(1)(2).

⁸ See Cal Pub. Util. Code Sections 399.11-399.32.

⁹ See 11 CCR § 2900 *et. seq.*

- A Feed-in Tariff that requires California’s Investor Owned Utilities (IOUs) to purchase the electricity generated by small (below 20MW) combined heat and power facilities.¹⁰

We describe below how the Federal Power Act divides jurisdiction between FERC and the states and the relationship between California’s environmental and clean energy policies and federal authority. We then turn to an analysis of the constitutionality of those state policies that affect both in- and out-of-state electricity producers. We conclude that the inclusion of PacifiCorp’s transmission assets in CAISO does not change the legal analysis of either FERC’s jurisdiction and any associated risk of preemption or the constitutionality of the state’s environmental and clean energy policies.

1. Expansion of CAISO to include PacifiCorp does not affect FERC’s jurisdiction over CAISO and neither displaces state authority over environmental matters nor affects state policies regarding generation facilities or the procurement of particular types of resources by load serving entities

a. Expansion of CAISO to include PacifiCorp does not affect FERC’s jurisdiction over CAISO

FERC regulates CAISO as a “public utility” under the Federal Power Act (FPA).¹¹ Any future expansion of CAISO to include PacifiCorp assets would not affect FERC’s jurisdiction over CAISO. As long as CAISO continues to operate the bulk transmission grid on behalf of its member utilities and administer regional wholesale power markets, CAISO will be subject to FERC jurisdiction. It makes no difference whether CAISO operates wholly within a single state or across multiple states. It is the function that CAISO performs rather than its territorial footprint that determines FERC jurisdiction.

Under the Federal Power Act, FERC has jurisdiction over (a) transmission of electricity in interstate commerce; and (b) wholesale sales (sales for resale) of electricity in interstate commerce.¹² Because the California bulk transmission grid is connected to the larger Western Interconnect, all transmission and all wholesale sales of electricity in California that make use of that bulk transmission grid are interstate and thus subject to FERC jurisdiction.¹³ Adding PacifiCorp (or any other entity) to CAISO does not change this fact. By the same token, a decision by CAISO to shrink its footprint so that it operated wholly within California would not change this fact.

¹⁰ AB 1613, *Waste Heat and Carbon Emissions Reduction Act*, codified as amended at Cal. Pub. Util. Code §§ 2840 to 2845 (2016).

¹¹ 16 U.S.C. §824(e).

¹² 16 U.S.C. §824(b)(1); *FERC v. EPSA*, 577 U.S. ___ slip op. at 3 (2016).

¹³ *New York v. FERC*, 535 U.S. 1, 7 (2002); *FPC v. Florida Power & Light Co.*, 404 U.S. 453, 460-63 (1972).

FERC’s jurisdiction over CAISO’s operation of the bulk transmission system and the wholesale power markets is exclusive.¹⁴ The FPA established a system of dual regulation of the electricity sector, with federal and state jurisdiction confined to particular spheres of activity.¹⁵ While the line between state and federal jurisdiction under the FPA has been the subject of two high-profile Supreme Court cases this term,¹⁶ neither of these cases affects FERC’s ongoing jurisdiction over CAISO (with or without the addition of PacifiCorp). Moreover, as discussed below, neither case appears to create any new risk of federal preemption for California’s existing authority over environmental matters or policies affecting generation facilities, nor does either case interfere with the procurement of particular types of resources by California’s Load Serving Entities (LSEs).

FERC has regulated CAISO since its inception in 1996, just as it regulates other Regional Transmission Organizations and Independent System Operators around the country. FERC’s primary responsibilities in this respect are to ensure that the rates, terms, and conditions that CAISO adopts for transmission and for wholesale sales of electricity are “just and reasonable” and “nondiscriminatory.”¹⁷ This includes “the authority—indeed, the duty—to ensure that rules or practices ‘affecting’ wholesale rates are just and reasonable.”¹⁸ The Supreme Court has recently confirmed that FERC’s “affecting” jurisdiction is limited to rules or practices that “*directly* affect the wholesale rate.”¹⁹

Expansion of CAISO to include PacifiCorp will not change or enhance FERC’s “affecting” jurisdiction. Just as before the expansion, FERC will continue to have jurisdiction only over rules or practices that “directly affect” wholesale rates in the CAISO region.²⁰ Among other things, the courts have expressly held that this authority

¹⁴ See, e.g., *Nantahala Power & Light Co. v. Thornburg*, 476 U.S. 953, 966 (1986). (confirming “the exclusive jurisdiction vested by Congress in FERC over the regulation of interstate wholesale utility rates”); *Miss Power & Light Co. v. Mississippi ex rel. Moore*, 487 U.S. 354, 377 (1988) (Scalia, J., concurring) (“It is common ground that if FERC has jurisdiction over a subject, the States cannot have jurisdiction over the same subject.”).

¹⁵ 16 U.S.C. §824(b)(1); *FERC v. EPSA*, 577 U.S. ___ slip op at 26-27 (“The Act makes federal and state powers complementary and comprehensive so that there will be no gaps for private interests to subvert the public welfare”) (internal quotation marks and citations omitted); *FPC v. Southern California Edison*, 376 U.S. 205, 215-16 (1964) (“Congress meant to draw a bright line easily ascertained, between state and federal jurisdiction. . .”).

¹⁶ *FERC v. EPSA*, 577 U.S. ___ (2016); *Hughes v. Talen Energy Marketing LLC*, 578 U.S. ___ (2016).

¹⁷ 16 U.S.C. §824d(a).

¹⁸ *FERC v. EPSA*, 577 U.S. ___ slip op. at 15; 16 U.S.C. §824e(a).

¹⁹ *FERC v. EPSA*, 577 U.S. ___ slip op. at 15 (emphasis in original; citation omitted).

²⁰ *Id.* (citing *California Independent System Operator v. FERC*, 372 F.3d 395, 403 (D.C. Cir. 2004) (limiting practices “affecting” rates “to those methods or ways of doing things that directly affect the rate or are closely related to the rate, not all those remote things beyond the rate structure that might in some sense indirectly or ultimately do so”).

does not permit FERC to dictate the specifics of an ISO's internal governance such as the selection and composition of the ISO's governing board.²¹

In sum adding PacifiCorp to CAISO as a participating transmission owner and changing CAISO's governance to accommodate this expansion cannot increase FERC's jurisdiction under the Federal Power Act, because that authority is already complete and exclusive with respect to CAISO's operation of the bulk transmission grid and the wholesale power markets.

b. Expansion of CAISO to include PacifiCorp does not displace state authority over environmental matters

Adding PacifiCorp to CAISO will not affect California's authority over environmental matters. Because FERC's jurisdiction over CAISO does not change as a result of the expansion of CAISO, California's authority over environmental matters will not be at increased risk of federal preemption as a result of the CAISO expansion. Put simply, the geographic expansion of CAISO to include PacifiCorp assets does not result in any concomitant expansion of FERC authority over state environmental matters; California will be able do anything it could do previously with respect to such environmental matters.

Because FERC is a creature of federal law, it has no authority beyond that granted to it by Congress.²² Other than some specific environmental requirements regarding hydroelectric licensing under Part I of the Federal Power Act, which are unrelated to the issues discussed in this memo, the FPA does not reach state environmental matters. Accordingly, FERC and the federal courts have long recognized that FERC cannot displace or preempt state environmental policies unless those policies directly intrude upon jurisdictional rates set by FERC.

To the extent that state environmental laws or policies directly intrude upon or seek to establish FERC jurisdictional rates, they would be vulnerable to a preemption challenge on those grounds. But this would be true irrespective of whether CAISO remains as it is or expands to include PacifiCorp assets and/or other entities in the future. Expanding the CAISO grid to include PacifiCorp assets does not change or expand FERC's authority over state environmental matters.

The Supreme Court's recent decision in *FERC v. EPSA*, 577 U.S. ___ (2016) does not change this conclusion. In that case, the Court upheld FERC regulations that allowed demand response to be aggregated and bid into the wholesale power markets on the grounds that the regulations were within the scope of FERC's authority to regulate

²¹ *California Independent System Operator v. FERC*, 372 F.3d 395, 398, 403 (D.C. Cir. 2004) (holding that FERC had no authority under its "affecting" jurisdiction to remove and replace the members of the CAISO board).

²² *California Independent System Operator Corp. v. FERC*, 372 F.3d 395, 398-99 (D.C. Cir. 2004).

practices affecting FERC jurisdictional rates. To the extent that a particular party or FERC seeks to argue in the future that certain state environmental laws or policies trigger or are somehow implicated by FERC's "affecting" jurisdiction, as clarified in the *EPSA* case, any such argument would be independent of the territorial footprint of CAISO and would turn on the question whether the practice in question "directly affects" a FERC jurisdictional rate.

Similarly, the Supreme Court's recent decision in *Hughes v. Talen Energy Marketing LLC*, 578 U.S. ___ (2016) does not create any new legal avenue for FERC to challenge state environmental laws as a result of an expanded CAISO. In that case, the Court held that the FPA preempted Maryland's efforts to encourage new generation by setting rates for capacity that was cleared through the FERC-regulated PJM capacity market. As the Court stressed in *Hughes*, its holding was "limited" and "[n]othing in [its] opinion should be read to foreclose Maryland and other States from encouraging production of new or clean generation through measures untethered to a generator's wholesale market participation."²³ The Court went out of its way, in other words, to stress that its decision was limited to the facts of the Maryland program and could not be interpreted as a basis for displacing or preempting state authority over environmental matters.

To conclude, expanding CAISO to include PacifiCorp as a participating transmission owner would not result in any new or expanded authority by FERC to displace state authority over environmental matters. With the addition of PacifiCorp, FERC would simply be regulating CAISO's operation of the bulk transmission grid and regional wholesale power markets over a larger area. FERC's authority under the Federal Power Act would remain unchanged.

c. Expansion of CAISO to include PacifiCorp does not affect state policies regarding generation facilities or the procurement of particular types of resources by load serving entities

The FPA expressly reserves to the states authority over generation facilities.²⁴ This includes the authority to determine what kind of generation will be built and what types of resources will be procured by load serving entities in the state. Adding PacifiCorp to CAISO does not affect this authority and does not create any new risk of federal

²³ *Hughes v. Talen Energy Marketing LLC*, 578 U.S. ___ slip op. at 15.

²⁴ 16 U.S.C. §824(b)(1); *Hughes v. Talen Energy Marketing LLC*, 578 U.S. ___ slip op at 2 (2016) ("The States' reserved authority includes control over in-state facilities used for the generation of electric energy.") (internal quotation marks and citations omitted); *FERC v. EPSA*, 577 U.S. ___ slip op. at 3 (2016) (noting that the FPA "also limits FERC's regulatory reach, and thereby maintains a zone of exclusive state jurisdiction"); *Connecticut Light & Power Co. v. FPC*, 324 U.S. 515, 525 (1945) (describing purpose of the FPA "to protect rather than to supervise authority of the states"); cf. *Oneok, Inc. v. Learjet, Inc.*, 575 U.S. ___, slip op. at 10 (2014) (stressing that "the Natural Gas Act was drawn with meticulous regard for the continued exercise of state power, not to handicap or dilute it in any way.").

preemption of California policies regarding generation facilities or the procurement of particular types of resources.

Congress, FERC, and the federal courts have long recognized the broad powers that states enjoy in directing the planning and resource decisions of utilities operating within their jurisdictions.²⁵ These powers are not diminished by the expansion of an ISO to encompass a broader, multi-state region, and both FERC and the courts have consistently reaffirmed these powers in various multi-state RTOs and ISOs. Such powers include, among other things, policies to promote procurement of particular types of resources, such as state Renewable Portfolio Standards; policies to incentivize construction of particular types of generation; bilateral contracting for future capacity; policies to require the retirement of existing facilities; administration of resource planning exercises; and policies to promote distributed energy resources and to allow demand response resources to be bid into wholesale power markets.²⁶

In fact, state policies to promote specific types of generation or encourage procurement of certain types of resources would only run afoul of FERC's jurisdiction under the Federal Power Act if they sought to establish or directly intruded upon a FERC jurisdictional rate. This issue arose in the context of California's feed-in tariff for combined heat and power facilities. As part of the state's efforts to reduce greenhouse gas emissions from the power sector, AB 1613 directed the California PUC (CPUC) to require California's Investor Owned Utilities (IOUs) to purchase, at a price set by the CPUC, the electricity generated by small (below 20 megawatts) combined heat and power facilities.²⁷ The three major California IOUs and the California PUC filed cross petitions at FERC seeking a declaratory order on whether the AB 1613 feed-in tariff constituted an effort to establish wholesale rates and thus intruded upon FERC's jurisdiction.²⁸ FERC found that the feed-

²⁵ See, e.g., *Entergy Nuclear Vermont Yankee LLC v. Shumlin*, 733 F.3d 393, 417 (2d Cir. 2013) ("States have broad powers under state law to direct the planning and resource decisions of utilities under their jurisdiction." (quoting *S. Cal Edison San Diego Gas & Elec. Co.*, 71 FERC ¶ 61,269 (1995))).

²⁶ See, e.g., *FERC v. EPSA*, 577 U.S. ___ slip op. at 25 (2016) (noting the FERC's demand response rules allowed states to determine whether their retail customers would be able to "make demand response bids in the wholesale market"); *Conn. Dept. Pub Util. v. FERC*, 569 F. 3d 477, 481 (D.C. Cir. 2009) ("State and municipal authorities retain the right to forbid new entrants from providing new capacity, to require retirement of existing generators, to limit new construction to more expensive, environmentally-friendly units, or to take any other action in their role as regulators of generation facilities without direct interference from the Commission."); *Entergy Nuclear Vermont Yankee LLC v. Shumlin*, 733 F.3d 393, 417 (2d Cir. 2013) ("States may, for example, order utilities to build renewable generators themselves, or order utilities to purchase renewable generation.") (internal quotation marks, alterations, and citation omitted); *PPL EnergyPlus LLC v. Solomon*, 766 F.3d 241, 255 (3d Cir. 2014) ("The states may select the type of generation to be built—wind or solar, gas or coal—and where to build the facility. Or states may elect to build no electric generation facilities at all.").

²⁷ AB 1613, *Waste Heat and Carbon Emissions Reduction Act*, codified as amended at Cal. Pub. Util. Code §§ 2840 to 2845 (2016).

²⁸ *California Public Utilities Commission*, 132 FERC ¶ 61,047 (2010) (Initial Order)

in tariff would not be preempted by the Federal Power Act if the program could be tailored to fit within PURPA's provisions for qualifying facilities (QFs).²⁹ That is, as long as the combined heat and power facilities were QFs as defined under PURPA and as long as the feed-in tariff rates were consistent with California's avoided cost provisions for QFs, the feed-in tariff would not interfere with FERC's jurisdiction.³⁰ In a subsequent order, FERC clarified that PURPA did not prohibit the CPUC from setting the feed-in tariff rate based on a multi-tiered avoided cost rate structure that reflected specific resource procurement requirements for California IOUs (e.g., the state Renewable Portfolio Standard).³¹ FERC stressed here that while it has exclusive jurisdiction over wholesale *rates*, "it is the *states* that have the authority to dictate a utility's actual purchase decisions."³² Thus, the states are free to employ a whole range of policy instruments and supports to dictate or encourage utilities' decisions regarding generation and procurement as long as they refrain from setting wholesale rates. In the context of California and the proposed expansion of CAISO, moreover, such powers would not be affected in any way by the addition of PacifiCorp's transmission assets (or those of any other entity).

Consistent with this, FERC has also long recognized the states' historical role in ensuring resource adequacy, requiring that such efforts be "workable" in the context of FERC's duty to ensure overall reliability of the bulk power grid.³³ Adding PacifiCorp's transmission assets to CAISO would not change this dynamic. CAISO's resource adequacy program, as approved by FERC, is based on bilateral procurement by California LSEs.³⁴ The CPUC and local regulatory authorities direct the procurement decisions and practices of the LSEs, including the procurement of preferred resources pursuant to state clean energy policies (e.g., RPS, loading order, etc.).³⁵ CAISO does not operate a centralized capacity market and engages only in backstop procurement in a

²⁹ *Id.* at P. 64-65. *see also* Public Utility Regulatory Policies Act of 1978, Pub. L. No. 95-617, § 210, 92 Stat. 3117, 3144-47.

³⁰ *California Public Utilities Commission*, 132 FERC ¶ 61,047 at P 67 (2010) (finding that "the AB 1613 program will *not* be preempted by the FPA or PURPA as long as: (1) the [combined heat and power] generators from which the CPUC is requiring the Joint Utilities to purchase energy and capacity are QFs pursuant to PURPA; and (2) the rate established by the CPUC does not exceed the avoided cost of the purchasing utility").

³¹ *California Public Utilities Commission*, 133 FERC ¶ 61,059 at P 20 (2010) (clarifying order) (finding that "the concept of a multi-tiered avoided cost rate structure is consistent with the avoided cost requirements set forth in section 210 of PURPA and in the Commission's regulations"). *See also California Public Utilities Commission*, 134 FERC ¶ 61,044 at P 32 (2011) (order denying rehearing) ("[I]n determining the avoided cost rate, just as a state may take into account the cost of the next marginal unit of generation, so as well the state may take into account obligations imposed by the state that, for example, utilities purchase energy from particular sources of energy or for a long duration. Therefore, the CPUC may take into account actual procurement requirements, and resulting costs, imposed on utilities in California.")

³² *California Public Utilities Commission*, 134 FERC ¶ 61,044 at P. 28 (emphasis in original).

³³ *Calif. Ind. System Operator Corp.*, 116 FERC ¶ 61,274 at P 1117 (2006).

³⁴ *Id.* at PP 1117-18.

³⁵ *Id.*

limited number of defined circumstances in order to ensure reliability. Thus, the capacity that California LSEs procure through bilateral contracts in order to meet resource adequacy requirements does not clear through a centralized capacity market.

Adding PacifiCorp's transmission assets to CAISO would not increase the probability that FERC would require a centralized capacity market for CAISO in the future. FERC has declined to require centralized capacity markets in regions where vertically-integrated LSEs, state resource planning, and bilateral contracting predominate.³⁶ These conditions already exist in the CAISO footprint.³⁷ Adding PacifiCorp would not change this given that PacifiCorp is a vertically-integrated utility that relies on state resource planning.³⁸ If anything, therefore, adding PacifiCorp to CAISO would strengthen rather than diminish the existing CAISO approach to resource adequacy and, accordingly, make it less likely that FERC would mandate a centralized capacity market in the future. For its part, CAISO has also made clear in public documents that it has no intention of seeking to create a capacity market. Its July 2016 revised proposed principles for governance of a regional ISO, for example, include a provision prohibiting CAISO "from proposing or endorsing a centralized market for the forward procurement of electric capacity that would (1) require capacity to clear at a market clearing price in order to count for resource adequacy purposes absent the unanimous authorization of the Western States Committee or (2) allow the participation of load-serving utilities from a state without the authorization of the applicable state regulator or local regulatory authority."³⁹

Moreover, even if FERC decided in the future to require a centralized capacity market for CAISO, this would not preclude the state of California, or any other state in the CAISO

³⁶ *Midwest Independent Transmission System Operator, Inc.*, 153 FERC ¶61,229 at PP 46-52 (2015). See also *Midwest Independent Transmission System Operator, Inc.*, 139 FERC ¶61,199 at 40 (2012) (rejecting MISO's request to convert MISO's voluntary capacity market to a mandatory centralized capacity market); *Midwest Independent Transmission System Operator, Inc.*, 125 FERC ¶61,060 at P 39 (2008) ("We reject arguments that a mandatory auction or a mandatory centralized capacity market is necessary to ensure resource adequacy."), *order on reh'g and compliance*, 127 FERC ¶61,054 at PP 24-30 (2009) (confirming that a mandatory centralized capacity market is not necessary to ensure resource adequacy in the MISO region).

³⁷ As is the case with respect to Investor Owned Utilities in a number of the MISO states, California's Investor Owned Utilities operate under a hybrid regulatory model that combines competitive wholesale power markets with regulated retail monopoly franchises. In addition to procuring power from third-party wholesale power suppliers, the California Investor Owned Utilities also own or control generation, transmission, and distribution assets.

³⁸ See, e.g., *Midwest Independent Transmission System Operator, Inc.*, 153 FERC ¶61,229 at PP 52 (2015) (noting "the predominance of vertically-integrated LSEs and long-term bilateral arrangements for obtaining capacity" as "key MISO region characteristics"). All of the five non-California western states in which PacifiCorp and its affiliates operate (Oregon, Washington, Idaho, Utah, and Wyoming) are traditional cost-of-service states that engage in state resource planning exercises.

³⁹ See CAISO, *Revised Proposal Principles for Governance of a Regional ISO 3* (July 15, 2016), available at <http://www.caiso.com/Documents/RevisedProposedPrinciples-RegionalISOGovernance.pdf>.

footprint, from continuing with various policies to ensure resource adequacy and/or to promote construction and procurement of certain types of generation facilities. Nothing in the Supreme Court’s recent decision in *Hughes* suggests otherwise. In that case, Maryland’s mandatory contracts-for-differences approach to promoting new generation was struck down because it expressly disregarded the interstate wholesale rate approved by FERC and established through the PJM capacity market.⁴⁰ As the Supreme Court made clear in *Hughes*, “[s]o long as a State does not condition payment of funds on capacity clearing the auction, the State’s program would not suffer from the fatal defect that renders Maryland’s program unacceptable.”⁴¹ The longstanding practice of using bilateral contracts to secure capacity was explicitly identified by the Court as well within the bounds of state authority.⁴² As noted above, the Court also stressed that its holding was “limited,” concluding that “[n]othing in this opinion should be read to foreclose Maryland or other States from encouraging production of new or clean generation through measures untethered to a generator’s wholesale market participation.”⁴³

FERC has also repeatedly and consistently exempted renewable resources from the minimum offer price rule (MOPR) requirements in several existing capacity markets, allowing these resources to bid into the capacity markets as price-takers. These requirements were established to guard against the exercise of “buyer-side” market power to artificially depress prices in the capacity markets. In PJM, for example, FERC exempted wind and solar resources from the MOPR, a decision that was subsequently upheld by the Third Circuit.⁴⁴ Likewise, FERC also granted MOPR exemptions for

⁴⁰ *Hughes v. Talen Energy Marketing, LLC*, 578 U.S. ___ slip op. at 14-15 (2016); see also *PPL EnergyPlus, LLC v. Solomon*, 766 F. 3d 241, 250-52 (3rd Cir. 2014) (finding that New Jersey’s Long-Term Capacity Pilot Program Act, which, like the Maryland program, sought to guarantee long-term fixed price contracts for new generation in the State, intruded upon FERC’s jurisdiction over the PJM capacity market and was preempted), *cert. denied*, *Fiordaliso v. Talen Energy Marketing*, ___ S.Ct. ___, 2016 WL 1618368 (Mem).

⁴¹ *Hughes v. Talen Energy Marketing, LLC*, 578 U.S. ___ slip op. at 15.

⁴² *Id.*, at 14.

⁴³ *Id.* (international quotation marks and citation omitted); see also *PPL EnergyPlus, LLC v. Solomon*, 766 F. 3d at 255 (“When a state regulates within its sphere of authority, the regulation’s incidental effect on interstate commerce does not render the regulation invalid. . . . The states may select the type of generation to be built—wind or solar, gas or coal—and where to build the facility. Or states may elect to build no electric generation facilities at all. The state’s regulatory choices accumulate into the available supply transacted through the interstate market. The Federal Power Act grants FERC exclusive control over whether interstate rates are ‘just and reasonable,’ but FERC’s authority over interstate rates does not carry with it exclusive control over any and every force that influences interstate rates.”).

⁴⁴ See *PJM Interconnection, LLC*, 135 FERC ¶61,022 at P 152 (2011) (accepting PJM’s proposal to exempt wind and solar generation from the MOPR), *order on reh’g*, 137 FERC ¶61,145 at PP 109-10 (2011) (finding that PJM’s decision to exempt wind and solar resources from the MOPR was a “pragmatic and reasonable approach”). See also *New Jersey Board of Public Utilities v. FERC*, 744 F. 3d 74, 90, 106-07 (2014) (upholding FERC’s approval of PJM’s decision to exempt wind and solar resources from the PJM MOPR).

renewable resources in both the New York ISO and ISO New England.⁴⁵ Taken together, these recent decisions further support the conclusion that even if FERC decided to require CAISO to institute a mandatory capacity market, which seems unlikely, the Commission would be expected to grant some form of MOPR exemption for renewable resources.

In addition to these exemptions for renewable resources, FERC has also approved two additional MOPR exemptions in PJM that further support the efforts of states and LSEs to ensure resource adequacy without having their procurement decisions subject to a MOPR. Specifically, FERC has approved MOPR exemptions for (a) self-supply by LSEs that rely largely on self-supply arrangements and that are neither significantly net-short or net-long in terms of the capacity they clear through self-supply relative to what they buy in the capacity market, and (b) new resources that are procured through a state-sponsored procurement process that is competitive and non-discriminatory and whose costs are not being recovered through a bypassable surcharge linked to clearance in the capacity market or are not being subsidized by a government agency.⁴⁶ FERC has recently authorized similar MOPR exemptions for the New York ISO.⁴⁷

⁴⁵ See *NY Public Service Comm'n et al. v. New York Independent System Operator, Inc.*, 153 FERC ¶61,022 at PP 47-51 (2015) (finding that a properly constructed renewable resources exemption from the NY ISO capacity market, which exempts only those resources with limited or no incentive and ability to exercise buyer-side market power, is just and reasonable), *order on reh'g*, 154 FERC ¶61,088 at P 14 (2016) (affirming previous finding on renewable resource exemption); *ISO New England, Inc.*, 147 FERC ¶61,173 at P 81 (2014) (accepting ISO New England's proposal "to allow an exemption from the MOPR for resources that qualify as Renewable Technology Resources as just, reasonable, and not unduly discriminatory or preferential"), *order on reh'g*, 150 FERC ¶61,065 at P 16 (2015) (denying request for rehearing on renewable exemption), *order on remand*, 155 FERC ¶61,023 at P 2 (2016) (affirming "its finding that the renewables exemption from the minimum offer price rule is just and reasonable, and not unduly discriminatory or preferential"). In the ISO New England context, "Renewable Technology Resources" are defined as "those resources that qualify under state renewable or alternative energy portfolio standards (or, in states without a portfolio standard, qualify under the states' renewable energy goals as a renewable energy resource) and that are geographically located in a state in which they qualify." 147 FERC ¶61,173 at P 62, n. 65. It bears emphasizing here that in the NY ISO and ISO New England cases (in contrast to the PJM case), FERC approved a cap on the amount of renewables that would be eligible for the MOPR exemption, reasoning that because these markets are smaller than PJM's, the renewables exemption would have a greater impact on prices. Smaller markets, in other words, might need a cap on the exemption in order to avoid price distortions. Accordingly, based on this precedent, even if FERC did mandate a centralized capacity market in the CAISO region, a development that (again) seems very unlikely, a decision to expand CAISO by adding PacifiCorp would actually support more favorable treatment of renewables than might be accorded in a smaller ISO market.

⁴⁶ See *PJM Interconnection, LLC*, 143 FERC ¶61,090 at PP 24-25, 52, 107 (2013) (accepting PJM's proposed MOPR exemption for competitive entry and conditionally accepting PJM's proposed MOPR exemption for self-supply), *order on reh'g and compliance, PJM Interconnection, LLC*, 153 FERC ¶61,066 at PP 32, 52 (2015) (denying request for rehearing on competitive entry and self-supply exemptions).

⁴⁷ See *Consolidated Edison Company of New York, Inc., v. New York Independent System Operator, Inc.*, 150 FERC ¶61,139 PP 45-51 (2015) (directing NY ISO to create a competitive

In sum, these various FERC orders and judicial opinions make clear that FERC is regulating the existing capacity markets in a manner that minimizes market disruption but also respects state authority over resource adequacy and procurement decisions and, specifically, state policies to support renewable energy resources. In *Hughes*, and similarly in the Third Circuit’s *Solomon* decision striking down a New Jersey program that also interfered with PJM’s capacity market, the fatal flaw that led to preemption was the effort by these states to encourage the construction of new power generation facilities by *directly regulating* the rates that these facilities would receive for their capacity in the PJM capacity market. Going forward, these states and others remain free to seek to encourage new generation through other means, including traditional bilateral contracts such as those used by California LSEs under the state’s existing resource adequacy framework.

Finally, nothing in the Eight Circuit’s recent decision in *North Dakota v. Heydinger* changes any of this analysis.⁴⁸ In that case, the court struck down a Minnesota statute that prohibited electricity imports if the imports would result in an increase in the state’s greenhouse gas emissions. The three-judge panel agreed that the statute was invalid, but the judges could not agree on the legal basis for their ruling. Instead, each issued a separate opinion based on separate legal grounds, and each of them disagreed with the others regarding the basis for invalidating the statute.

The relevant portions of the Minnesota statute prohibited “any person” from “import[ing] or commit[ing] to import from outside the state power from a new large energy facility that would contribute to statewide power sector carbon dioxide emissions; or enter[ing] into a new long-term power purchase agreement that would increase statewide power sector carbon dioxide emissions.”⁴⁹ One judge found that the statute violated the dormant commerce clause. Another found that it was preempted by the Clean Air Act. And yet another found that it was preempted by the Federal Power Act (FPA). The dormant commerce clause and Clean Air Act preemption opinions are discussed in the next section.

With respect to FPA preemption, the concurring opinion by Judge Murphy found that, because the Minnesota statute operated as a complete ban on certain types of wholesale

entry exemption), order on clarification, reh’g, and compliance, 152 FERC ¶61,110 at P 39-45 (2015) (denying requests for rehearing on competitive entry exemption); *NY Public Service Comm’n et al. v. New York Independent System Operator, Inc.*, 153 FERC ¶61,022 at PP 10, 61-62 (2015) (directing New York ISO to design a self-supply exemption that included net-short and net-long thresholds similar to those used in PJM), *order on reh’g*, 154 FERC ¶61,088 at P 17-18 (2016) (denying requests for rehearing on New York ISO’s design of a self-supply exemption).

⁴⁸ *North Dakota v. Heydinger*, No. 14-2156 (8th Cir., 2016).

⁴⁹ Next Generation Energy Act, Minn. Stat. §216H, subd. 3. New facilities are defined as those built after 2007. If such a facility were to contribute to statewide carbon dioxide emissions, the facility could nevertheless export the electricity into Minnesota if it purchased carbon dioxide allowances from another state’s cap and trade system (such as California’s).

power contracts, it impermissibly intruded upon FERC’s jurisdiction over wholesale sales of electricity in interstate commerce.⁵⁰ But as Judge Colloton pointed out in his concurring opinion, the statute did not impose a “complete ban” on certain wholesale contracts. Rather, it allowed such contracts to proceed as long as they were accompanied by certain offset requirements. Thus, Judge Colloton argued (correctly in our view), the FPA does not preempt such contracts. We discuss Judge Colloton’s reasoning that the statute is problematic under the Clean Air Act in the Commerce Clause section below.⁵¹

Moreover, both FERC and the Supreme Court have long recognized that the states have authority to direct the procurement decisions of their regulated utilities (see discussion above). It therefore seems inconsistent, at best, to say that states are allowed to promote certain types of generation on the one hand (based on their emissions profile or other attributes) but cannot prohibit other types of generation (based on their emissions profile or other attributes), given that a decision to promote a particular type of generation could be viewed as tantamount to a decision to ban other types. In the Supreme Court’s *Hughes* decision, of course, the problem was that the means selected to promote new generation capacity *directly regulated* the rates that the facilities would receive in the PJM capacity market. That is far different from a state policy that seeks to ensure that the electricity its residents use has a particular emissions profile.

To be sure, by simply prohibiting any person from importing out-of-state power that would contribute to an increase in the state’s GHG profile, the Minnesota statute suffered from some imprecise drafting that may have made it more vulnerable to attack. In this respect, California’s greenhouse gas emissions performance standard (SB 1368) would appear to be on stronger ground if it were ever subject to an FPA preemption challenge along the lines of Judge Murphy’s opinion in *Heydinger*. Unlike the Minnesota statute, for example, California’s performance standard simply requires that any “baseload generation” supplied to a load serving entity or to a local publicly owned electric utility under any “long-term financial commitment” must comply with the greenhouse gas emissions performance standard as established in regulation.⁵² These regulations subsequently established a performance standard of 1100 pounds of carbon dioxide per megawatt hour (MWh) of electricity.⁵³ The California standard is thus more specific than the Minnesota statute in applying directly to load-serving entities and municipal utilities,

⁵⁰ *Heydinger* at 25-27.

⁵¹ *Heydinger* at 28-29. Judge Colloton found instead that the Minnesota statute was preempted by the Clean Air Act (discussed below).

⁵² See Cal Public Utilities Code §8341(a) (2016): “No load-serving entity or local publicly owned electric utility may enter into a long-term financial commitment unless any baseload generation supplied under the long-term financial commitment complies with the greenhouse gases emission performance standard established by the commission, pursuant to subdivision (d), for a load serving entity, or by the Energy Commission, pursuant to subdivision (e), for a local publicly owned electric utility.”

⁵³ Cal Code of Regs. Ch 11, Art 1, §§ 2901 *et seq.*; California Public Utilities Commission, Greenhouse Gas Performance Standard, <http://www.cpuc.ca.gov/General.aspx?id=5927>.

and it is not phrased as a flat prohibition on particular fuels but rather as a requirement that power procured under long-term contracts have certain environmental attributes.

Most importantly for the analysis here, however, is the fact that none of these policies are affected in any way by the proposed expansion of CAISO. That is, the proposal to include PacifiCorp's transmission assets in CAISO has no relevance to the legal analysis regarding FPA preemption in the *Heydinger* case. If applied to the California performance standard, the reasoning of the case would apply whether or not CAISO's footprint expands. Put another way, either the California performance standard is a legitimate exercise of state power or not under the *Heydinger* case, irrespective of the size of the CAISO footprint.

To conclude, a decision to expand CAISO to include PacifiCorp's transmission assets does not increase the preemption risk facing California's policies regarding generation facilities or the procurement of particular types of resources by load-serving entities. Those risks exist independently of any decision to expand CAISO and, as such, they are not relevant to the legal analysis provided here. Based on the Supreme Court's recent decision in *Hughes*, moreover, as long as California refrains from attempting to directly regulate or interfere with a FERC jurisdictional rate, it will continue to enjoy broad authority to direct the planning and resource decisions of utilities operating within its jurisdiction.

2. Expansion of CAISO to include PacifiCorp does not change any potential Commerce Clause claims under the U.S. Constitution

State regulation of goods and services that cross interstate boundaries, including the environmental regulation of energy markets, is subject to the Commerce Clause of the U.S. Constitution. The expansion of CAISO to include PacifiCorp does not alter the constitutional standards that apply to California clean energy and environmental policies. Electricity that flows across the CAISO system has and will continue to be traveling in interstate commerce over the Western Interconnect, regardless of whether CAISO operates wholly within the state of California or expands to include transmission facilities in other states.

The expansion of CAISO to include PacifiCorp as a participating transmission owner does not change the constitutionality of California policies that regulate the electricity sector, including the renewable portfolio standard, the state's performance standard, and the cap-and-trade program's inclusion of electricity imports, since those policies were already subject to the Commerce Clause. Expansion of CAISO to include PacifiCorp does not affect whether the state's electricity sector policies are valid under the Commerce Clause. We nevertheless explain the current status of Commerce Clause doctrine and evaluate the possibility of legal challenges to California policies on constitutional grounds.

States that regulate goods and products sold in interstate commerce are subject to what is known as the dormant Commerce Clause. The dormant Commerce Clause—so-called because it is a principle derived from the text of the Commerce Clause but is not explicitly set forth in it⁵⁴—is designed to prevent states from engaging in economic protectionism that favors their own economic interests at the expense of out-of-state interests. The most constitutionally suspect state policies are those that discriminate explicitly in favor of in-state economic interests or have a discriminatory purpose. These “facially discriminatory” policies, and those motivated by “economic protectionism,” are essentially *per se* unconstitutional unless a state can show that it has no other means to achieve a legitimate state purpose.⁵⁵

The constitutional analysis does not end, however, with policies that are facially discriminatory or have a discriminatory purpose. Even those policies that are not facially or purposely discriminatory but have effects on interstate commerce are subject to the Commerce Clause. The “Pike” balancing test applies to such policies and is far more deferential to states in analyzing non-discriminatory laws that are “directed to legitimate local concerns, with effects upon interstate commerce that are only incidental.”⁵⁶ A court will uphold a nondiscriminatory state statute that has an effect on interstate commerce “unless the burden imposed on interstate commerce is clearly excessive in relation to the putative local benefits.”⁵⁷ Because this inquiry is so dependent on the particular evidence about the costs and benefits of a particular regulation in future regulation, we do not analyze its potential application in this memorandum. It is worth stressing, however, that the test is very deferential to state regulation.

Some courts have imposed a third test on state laws under the dormant Commerce Clause. Known as the “extraterritoriality test,” these courts have held that “[t]he Commerce Clause precludes application of a state statute to commerce that takes place wholly outside of the state’s borders.”⁵⁸ Importantly, however, the Ninth Circuit Court of Appeals, which has jurisdiction over California, has limited the extraterritoriality test to laws that either “dictate the price of a product,” or “tie[] the price of its in-state products to out-of-state prices.”⁵⁹

⁵⁴ Section 8, clause 3 of Article 1 of the United States Constitution grants Congress the power to regulate commerce “among the several states.”

⁵⁵ *United Haulers Ass’n v. Oneida-Herkimer Solid Waste Management Authority*, 550 U.S. 330, 338-39 (2007) (“An ordinance may be valid even if it affects interstate commerce if it passes a two pronged inquiry: “first, whether the ordinance discriminates against interstate commerce, and second, whether the ordinance imposes a burden on interstate commerce that is clearly excessive in relation to the putative local benefits.”)

⁵⁶ *United Haulers*, 550 U.S. at 346.

⁵⁷ *United Haulers*, 550 U.S. at 346 (citations omitted).

⁵⁸ *Cotto Waxo Co.*, 46 F.3d at 793 (citing *Healy*, 491 U.S. at 336).

⁵⁹ *Assoc. des Eleveurs de Canards et d’Oies du Quebec v. Harris*, 729 F.3d 937, 951 (9th Cir. 2013).

To date, with one exception involving a Minnesota policy that we discuss below, challenges to state climate and energy policies on Commerce Clause grounds have met with failure. And importantly, in a Commerce Clause decision involving California's Low Carbon Fuel Standard (LCFS), the Ninth Circuit rejected a Dormant Commerce Clause claim. Although the LCFS involves fuels, not electricity, the court's reasoning in upholding the LCFS against constitutional challenge serves as an important precedent in evaluating the constitutionality of California climate policies involving the electricity sector.

Two categories of state climate policies regulating the electricity sector have faced dormant Commerce Clause challenges, one involving attempts to limit the carbon content of electricity imported into a state and another involving renewable portfolio standards. California has policies that do both and therefore both categories of cases are relevant to an analysis of their constitutionality.

a. The Expansion of CAISO to Include PacifiCorp Assets Does Not Change the Constitutionality of California's Regulation of Electricity Imports

California regulates imports of electricity to limit their carbon content in two ways. The performance standard, as described above, prohibits utilities from entering into long-term contracts for baseload electricity generation where the carbon content of the electricity generated exceeds 1100 pounds of carbon dioxide per megawatt hour of electricity. This policy applies to contracts with both in- and out-of-state generators.⁶⁰ The effect of the performance standard is to ban California LSEs from entering long-term contracts to import electricity generated from coal for baseline purposes since, at least to date, coal-fired power plants cannot meet the standard. California has no in-state coal-fired power plants.

The second California policy that regulates imports of electricity into the state is part of the state's cap-and-trade program. This policy is designed to ensure that the state's greenhouse gas emissions from the generation of electricity both in and out of state are captured in California's regulatory policies. In-state generation is regulated by measuring emissions from power plants within the state's borders. The regulation of greenhouse gas emissions from out-of-state generation that is imported into the state is more complex. It is not possible to track specific electricity flows into and out of a state. Electric power does not travel directly from a particular generation facility into a state; instead, the grid operates on a regional basis, with supply and demand constantly balanced and energy moving to those areas of high demand in the region that need it.⁶¹

⁶⁰ 20 CCR § 2902 (West 2016).

⁶¹ For an explanation of the interconnected nature of our electric grid, see BRIEF FOR AMICI CURIAE BENJAMIN F. HOBBS, et al. in *EME Homer Generation v. E.P.A.*, https://www.edf.org/sites/default/files/sites/default/files/content/12-1182_and_12-1183%20Benjamin_F_Hobbs_etc.pdf.

As a result of the way the grid operates, California’s Air Resources Board has developed regulations to attribute greenhouse gas emissions to approximate the greenhouse gas emissions Californians are responsible for in purchasing and using electricity generated out-of-state by imposing compliance obligations on the first deliverer of electricity into the state.⁶² Emissions are measured in one of two ways. Either the importer can use a facility-specific factor that requires the importer to demonstrate that the importer had the right to electricity from a specific plant that was actually being utilized at the time of the import.⁶³ If it cannot do so, the importer must use an “unspecified” default factor that measures the emissions of imported electricity at the rate that represents the most likely emissions factor associated with out-of-state electricity generation that will meet California electricity demand.⁶⁴ We refer to this set of regulations as the “first importer rules.”⁶⁵

These two policies—the performance standard and the first importer rules—have the potential to raise concerns under dormant Commerce Clause jurisdiction, though they have to date not been the object of lawsuits against them. Our analysis suggests that the California policies are likely to withstand any constitutional challenge. Importantly, however, the legal issues surrounding the constitutionality of the two policies do not change by virtue of the inclusion of PacifiCorp assets in the CAISO footprint. Any constitutional issues, in other words, exist independent of the CAISO expansion because they involve electricity moving in interstate commerce and are therefore already subject to the Commerce Clause.

The *Heydinger* case, as we explained earlier, involves a policy that is somewhat similar to, but distinguishable from, California’s performance standard. Indeed, the part of the Minnesota statute that caused one judge on the Eighth Circuit to strike the statute down

⁶² Cal. Code Regs. Title 17 § 95111(a)(2) (“*Delivered Electricity*. The electric power entity must report imported, exported, and wheeled electricity in MWh disaggregated by first point of receipt or final point of delivery, as applicable, and must also separately report imported and exported electricity from unspecified sources and from each specified source.”); *see also* Cal. Code Regs. Title 17 § 95852 (b) (describing compliance obligations of first deliverers of electricity).

⁶³ Cal Code Regs, Title 17§ 9511(a)(4) (defining imported electricity from specified facilities); §95852(B)(3) (setting forth criteria for specified sources); 9511(b)(2) (formula for specified emissions).

⁶⁴ Cal. Code Regs Title 17 § 95111 (b)(1) (formula for determining unspecified emissions). For an explanation of how the importer rules work, *see* J. Bushnell et al. / Energy Policy 64 (2014) 313–323.

⁶⁵ CARB is currently working with CAISO and considering changing the process by which electricity is tracked in order to measure GHGs associated with the California electricity market. *See* State of California, Air Resources Board, *Public Hearing to Consider the Proposed Amendments to the California Cap On Greenhouse Gas Emissions and Market Based Compliance Mechanisms, Draft Staff Report: Initial Statement of Reasons*, (July 12, 2016) at 50-51 (describing potential changes), http://www.arb.ca.gov/cc/capandtrade/draft-ct-reg_071216.pdf. This memo does not address any rule changes CARB might adopt to track out of state GHGs.

on Commerce Clause grounds *is not part of the California statute*. Thus the Commerce Clause analysis in the *Heydinger* case is not applicable to California’s provision. We explain why below.

As a reminder, the relevant provisions of Minnesota’s Next Generation Act prohibit any person from “. . . import[ing] or commit[ing] to import from outside the state power from a new large energy facility that would contribute to statewide power sector carbon dioxide emissions; or . . . enter[ing] into a new long-term power purchase agreement that would increase statewide power sector carbon dioxide emissions.”⁶⁶ Minnesota and North Dakota are both part of the Midcontinent Independent System Operator (MISO), which coordinates transmission for the Midwestern part of the country and parts of Canada and also operates an organized generation and capacity market.⁶⁷ In striking down the import and long-term power purchase agreement provisions, the Eighth Circuit panel issued three separate concurring opinions using three separate and distinct bases for the decision and disagreeing with one another’s legal reasoning. We have already described the concurring opinion that reasoned that the Minnesota provision is preempted by the Federal Power Act. Another judge struck the Minnesota provision down on the grounds that it violates the dormant Commerce Clause. The third judge struck the statute down on the ground that the Minnesota policy is preempted by the federal Clean Air Act. We address the latter two arguments below.

One judge, Judge Loken, reasoned that because electricity transmitted on the MISO system cannot be directed to a particular state or a particular end-user in a particular state, the Minnesota statute could apply to an electricity generator operating wholly outside the borders of Minnesota and not intending to export electricity to Minnesota.⁶⁸ The statute’s language applies to “any person” importing electricity into Minnesota (unlike the California statute, which applies specifically to California’s load-serving entities and publicly owned utilities). In Judge Loken’s view, electricity that is injected onto the MISO transmission lines might, in fact, wind up being imported into Minnesota even if the generator of the electricity does not intend for it to be. As a result, the court reasoned, such a generator—under the explicit terms of the statute—would need to seek regulatory approval from the state of Minnesota to demonstrate that it was complying with the statute. The Minnesota regulation therefore violated the Commerce Clause of the United States constitution because it regulated wholly out-of-state economic activity in violation of the extraterritoriality test.⁶⁹

We believe that Judge Loken’s opinion is based on an erroneous understanding of the way the electric grid works. We are joined in this belief by Judge Loken’s colleague on the case, Judge Murphy, who concurred in the result of the case on the grounds that the policy is preempted by the FPA (addressed above) but who disagreed that the policy

⁶⁶ *Heydinger* at 2.

⁶⁷ *Heydinger* at 4.

⁶⁸ *Heydinger* at 15.

⁶⁹ *Heydinger* at 17-18. Judge Leyder did not separately explain why he struck down subsection (3) of the Minnesota statute.

violates the Commerce Clause. Judge Murphy objected to Judge Loken’s characterization of how electrons “flow” over the MISO system. Judge Loken explained his belief that “when a non-Minnesota generating utility injects electricity into the MISO grid to meet its commitments to non-Minnesota customers, it cannot ensure that those electrons will not flow into and be consumed in Minnesota.”⁷⁰ Judge Murphy disputed this description. His description of the transmission of electricity is, in our view, the accurate one: “In the electricity transmission system, individual electrons do not actually ‘flow’ in the same sense as water in a pipe. Rather, the electrons oscillate in place, and it is electric energy which is transmitted through the propagation of an electromagnetic wave. Electricity on the grid behaves according to the laws of physics, and it cannot be dispatched from one particular place to another. Energy flowing onto a power grid energizes the entire grid, and consumers then draw undifferentiated energy from that grid.”⁷¹

This factual disagreement between Judge Loken and Judge Murphy is important from a legal perspective in the Minnesota case because of a dispute over how the Minnesota statute should be construed. Judge Loken construed the statute to apply to any generator injecting power onto the MISO grid regardless of whether it has a bilateral contract with a Minnesota utility or is participating in MISO short term energy markets. That is because, under Loken’s understanding of the way electricity works on the grid, electrons injected by a generator could accidentally flow into Minnesota and “any person” importing electricity into Minnesota could then be subject to the statute. Judge Murphy’s explanation, however, demonstrates that electrons don’t flow across state borders but instead “oscillate in place” and energize the grid. Thus Minnesota could not regulate the out-of-state generator with no connection to Minnesota who injects electrons into the MISO grid, because there is simply no way to track the flow of electrons into Minnesota. Judge Murphy’s opinion concludes that because of the way electricity energizes the grid, the only reasonable construction of the Minnesota statute is that it does not apply to such a generator, nor does it apply to MISO short-term energy markets. Instead, the statute should be construed to apply only to parties to bilateral contracts under which a Minnesota utility contracts with an out-of-state generator for long-term power.⁷² Those parties do not operate wholly outside Minnesota’s borders, and therefore the statute is sound under the Commerce Clause.⁷³

California’s performance standard regulation is on its face limited to bilateral contracts between in-state utilities and generators. Thus the concern that Judge Loken had about the Minnesota statute—and the basis for his opinion striking the statute down on Commerce Clause grounds—does not even apply to the California statute.

In addition to this important factual distinction, Judge Loken also relied on a test under the Commerce Clause, the “extraterritoriality test” that, as the Ninth and Tenth Circuits

⁷⁰ *Heydinger* at 15.

⁷¹ *Heydinger* at 22 (citations omitted).

⁷² *Heydinger* at 22-23.

⁷³ *Id.*

have explained, has never been used by the U.S. Supreme Court to invalidate policies that do not involve differential prices for in- and out-of-state products. The Ninth Circuit made that precedent clear in evaluating the constitutionality under the Commerce Clause of California’s ban on foie gras produced as the result of force-feeding a bird. As the Ninth Circuit explained:

The [Supreme Court has held that the extraterritoriality doctrine is] not applicable to a statute that does not dictate the price of a product and does not “[t]ie the price of its in-state products to out-of-state prices.” Here, [the foie gras ban does not impose any prices for duck liver products and does not tie prices for California liver products to out-of-state prices. [The extraterritoriality doctrine is] thus inapplicable in this case.⁷⁴

California’s first importer rules and its performance standard do not impose any prices for electricity and do not tie in-state prices for California electricity to out-of-state prices. The extraterritoriality test would not under the Ninth and Tenth Circuit reasoning, therefore, apply to determining their constitutionality.

Moreover, California’s policies regulate the purchasing decisions by entities doing business within the state and treat in-state and out-state purchases the same. They do not regulate wholly out-of-state behavior. The performance standard prohibits load-serving entities serving California end-use customers from entering into long-term contracts for generation that exceeds the performance standard, whether or not the generators are located in- or out-of-state. Minnesota’s statute—in Judge Loken’s view—does not limit its provisions to entities that are tied to the state but instead apply to “any person.” California’s first importer rules are also designed to apply only to electricity that can be attributed to California. The implementation of the rules is aided by extensive cooperation between CARB and CAISO that allows CAISO to distinguish between electricity generated out-of-state but deemed to be imported into California and electricity that is not, and a methodology that allows for the cost of California carbon compliance to be incorporated into wholesale bidding decisions.⁷⁵ Minnesota made no such efforts. As long as California continues to employ a methodology that reasonably

⁷⁴ *Association des Eleveurs de Canards et d'Oies du Quebec v. Harris*, 729 F.3d 937, (9th Cir. 2013). See also, *Energy and Environmental Legal Institute v. EPEL* 793 F.3d 1169, 1170-71 (10th Cir. 2015).

⁷⁵ CARB and CAISO have been working to clarify the tracking of these resources with the expansion of CAISO’s Energy Imbalance Market (EIM) and will need to continue to do so if CAISO expands to include the PacifiCorp assets. For guidance on the reporting requirements for electricity importers and exporters in light of the expansion of CAISO’s EIM, see State of California Air Resources Board, *ARB Energy Imbalance Market Reporting Transactions, Frequently Asked Questions (FAQs)*, <http://www.arb.ca.gov/cc/reporting/ghg-rep/ghg-rep-power/eim-faqs.pdf>; see also State of California Air Resources Board, *Public Hearing to Consider the Proposed Amendments to the California Cap On Greenhouse Gas Emissions and Market Based Compliance Mechanisms, Draft Staff Report: Initial Statement of Reasons*, (July 12, 2016) at 50-51 (describing potential CAISO changes to calculating emissions), http://www.arb.ca.gov/cc/capandtrade/draft-ct-reg_071216.pdf.

attempts to attribute California's share of greenhouse gases to its electricity imports, and to measure the greenhouse gases of generators who are parties to long-term contracts with California's utilities, our view is that the state's policies should be able to withstand scrutiny under the Commerce Clause. The expansion of CAISO to include the PacifiCorp assets does not change this analysis.

The *Heydinger* case also included a concurring opinion from a third judge, Judge Colloton, who disagreed with his two colleague's opinions and offered a third rationale for striking down the Minnesota statute. He argued that the Minnesota provisions are preempted by the Clean Air Act. Because the Minnesota statute gives out-of-state generators the option of offsetting greenhouse gas emissions from power imported to Minnesota by purchasing allowances in another state's cap-and-trade program, Judge Colloton held that this was preempted by the Clean Air Act, which regulates greenhouse gases and grants states "primary responsibility for assuring air quality within [their] entire geographic region. § 7407(a); see also § 7401(a)(3)."⁷⁶ In his view, generators in one state should not have to answer both to the state in which they are located and a state to which they import electricity by potentially reducing emissions for each one. A coal-fired power plant in North Dakota, for example, could be required to reduce greenhouse gases in order to meet Minnesota's Next Generation Act requirements and could also be required to reduce emissions under North Dakota's implementation of the Clean Air Act. This, reasoned Colloton, is impermissible because "allowing 'a number of different states to have independent and plenary regulatory authority over a single discharge would lead to chaotic confrontation between sovereign states.'"⁷⁷ The logic of this argument seems peculiar, since the facility always has the option of declining to sell power to Minnesota entities. In any event, Colloton's analysis does not apply to California's performance standard. California's performance standard does not allow out-of-state generators that exceed the standard to offset their emissions either through the purchase of cap-and-trade allowances or through reducing their emissions. Instead, California's utilities cannot enter long-term contracts with such generators. Therefore, its performance standard appears not to raise Clean Air Act preemption issues of the sort with which Judge Colloton is concerned.

Not only are California's first importer and performance standard rules a) not subject to the extraterritoriality doctrine and b) distinguishable from the Minnesota Next Generation Act, but the Ninth Circuit Court of Appeals has issued a decision that provides a helpful precedent for any Commerce Clause challenge to California's climate policies. We next review the case, which upheld California's Low Carbon Fuel Standard, to demonstrate why the state's electricity import rules are likely to be upheld as constitutional if challenged.

In *Rocky Mountain Farmers Union v. Corey*,⁷⁸ the Ninth Circuit found that the state's Low Carbon Fuel Standard (LCFS) did not discriminate against interstate commerce

⁷⁶ *Heydinger* at 29.

⁷⁷ *Heydinger* at 29-30.

⁷⁸ 730 F.3d 1070 (9th Cir. 2013), *cert. denied*, 134 S. Ct. 2875 (2014).

under the “facially discriminatory” prong of the Commerce Clause doctrine. An explanation of the LCFS is necessary to describe the court’s ruling. The LCFS caps the average carbon intensity of transportation fuels in California’s market. Fuel blenders must either meet a specified annual carbon intensity in their fuels or use credits to comply with the standard if their intensity is too high. If their fuel is less carbon intensive than required, blenders can generate credits to sell to companies that need them to comply with the standard.

In order to capture the full measure of carbon intensity, the state uses a “life cycle analysis,” taking into account all of the carbon emissions that are generated in not only the production and refining of the fuel but also in transporting it to market. The state does so for obvious reasons: if it took into account only the emissions generated from, for example, production, overall emissions could increase if the emissions from transporting the fuel into the state were higher than fuel produced elsewhere, including within the state. The result is that a chemically identical gallon of gasoline blended to reduce the carbon intensity of the fuel with, say, ethanol, could have a higher carbon intensity depending on where and how the gasoline was produced, refined and shipped. North Dakota ethanol-blended gasoline, in other words, could have a different carbon intensity than Oregon ethanol-blended gasoline or California ethanol-blended gasoline. And one gallon of North Dakota ethanol could have a different carbon intensity than another North Dakota gallon if the production and refining of the gallon was done with different sources of energy (natural gas as opposed to coal, for example).⁷⁹ Opponents of the LCFS sued, arguing that this life cycle treatment—in treating what could be identical gallons of gasoline differently depending on where and how they were produced and transported—unconstitutionally discriminated against out-of-state producers.

A lower court had held that the LCFS “discriminates on the basis of origin.” The Ninth Circuit disagreed. Instead, the court found that the California methodology, in measuring a complex series of factors to determine carbon intensity, “is an average based on scientific data, not an ungrounded presumption that unfairly prejudices out-of-state ethanol.”⁸⁰ The court distinguished between unconstitutional discrimination intended to favor in-state businesses and treatment that may result in the unequal treatment of states but that is not facially discriminatory. As the court reasoned:

When it is relevant to that measurement [of overall carbon intensity], the Fuel Standard considers location, but only to the extent that location affects the actual GHG emissions attributable to a default pathway. Under dormant Commerce Clause precedent, if an out-of-state ethanol pathway does impose higher costs on California by virtue of its greater GHG emissions, *there is a nondiscriminatory reason for its higher carbon intensity value*. Stated another way, if producers of out-of-state ethanol actually cause more GHG emissions for each unit produced, because they use dirtier electricity or less efficient plants, CARB can base its regulatory treatment on these emissions. If California is to successfully promote

⁷⁹ *Rocky Mountain Farmers*, 730 F.3d at 1080-84 (describing program).

⁸⁰ 730 F.3d at 1089.

low carbon-intensity fuels, countering a trend towards increased GHG output and rising world temperatures, it cannot ignore the real factors behind GHG emissions.⁸¹

This language—rejecting the application of the “facially discriminatory” test for a policy that considers location as long as the reason for the consideration of location is non-discriminatory—is powerful for any analysis of the constitutionality of the first importer rules. The performance standard does not take location into account and thus is far less likely to face constitutional challenge. But the first importer rules apply to the place at which scheduled electricity first, in theory, crosses the California border and thus has a locational element. The reason that California has developed the electricity import rules is to ensure that California is accounting for and regulating all of the emissions associated with its in-state electricity use in order to reduce the state’s overall greenhouse gas emissions.⁸² Without such rules, the state’s electricity providers could simply import all of their electricity from out-of-state, avoid complying with the cap-and-trade program and actually *increase* the state’s overall greenhouse gas emissions from the electricity sector. Thus, as with the LCFS, California has a non-discriminatory reason for taking the location of electricity imports into account and thus is unlikely to have a facial Commerce Clause challenge against it succeed. The expansion of CAISO does not change this analysis.

Finally, the *Rocky Mountain* court also rejected arguments that the LCFS impermissibly regulated extraterritorial behavior. Although, as referenced above, the *Association des Eleveurs de Canards et d'Oies du Quebec* case (the foie gras case) rejects application of the extraterritorial doctrine altogether if a statute does not discriminate on the basis of price, the *Rocky Mountain* court also made clear that it is valid for California to “regulate commerce and contracts within their boundaries with the goal of influencing the out-of-state choices of market participants.”⁸³ The performance standard regulates contracts within the state of California—between its utilities and baseload generators. Such regulation is constitutionally permissible.

Although we believe that current Commerce Clause doctrine makes it highly unlikely that California’s electricity import rules would be struck down as unconstitutional, a court could, of course, disagree. The U.S. Supreme Court has not in recent years evaluated the constitutionality of clean energy policies and therefore could change the doctrinal landscape we have evaluated to be either more favorable to state policies or less. Nevertheless, the expansion of CAISO does not change our constitutional analysis. California is already subject to the Commerce Clause because it participates in a regional system of transmission; the CAISO expansion does not increase the likelihood that a constitutional challenge would succeed on Commerce Clause grounds.

⁸¹ 730 F.3d at 1090.

⁸² See ARB staff report, note 64 at 50-51 for support of the state’s reasoning in developing its rules.

⁸³ 793 F.3d 1103.

b. The Expansion of CAISO Does Not Affect the Constitutionality of California’s Renewable Portfolio Standard Requiring the Procurement of a Set Percentage of Renewable Resources

California’s RPS requires its Investor Owned Utilities (IOU) and publicly owned utilities to procure 33 percent of their electricity from renewable sources by 2020 and 50 percent by 2030. Although some state RPSs have faced constitutional challenge under the Commerce Clause, the only reported federal court decision to consider a broad-based challenge to an RPS—the State of Colorado’s—rejected the constitutional claim. Other Commerce Clause challenges have involved RPS policies that explicitly favor in-state renewable resources, but to date no court has issued a decision evaluating such a challenge.⁸⁴ Our view is that California’s general RPS is, similarly, likely to withstand constitutional challenge under the same reasoning as the 10th Circuit Court of Appeals decision upholding Colorado’s RPS. And, importantly, the expansion of CAISO to include the PacifiCorp assets would not change this constitutional analysis. California’s RPS is already subject to the Commerce Clause because electricity that serves California customers crosses state borders.

In *Energy and Environmental Legal Institute v. EPEL*,⁸⁵ out-of-state coal producers challenged Colorado’s RPS. Like California, Colorado is connected to the Western Interconnect and receives some of its power from out of state.⁸⁶ The coal producers argued that, because Colorado is a net importer of electricity, its RPS would mean that less coal would be sold overall on the grid of which Colorado is a part.⁸⁷ They contended that the RPS discriminated against out-of-state producers under the extraterritorial analysis applied in the *Heydiger* case described above involving Minnesota’s Next

⁸⁴ See State Power Project, *State Cases*, <http://statepowerproject.org/states/> for a summary of Commerce Clause cases. The 7th Circuit, in a case involving a FERC order about cost allocation and transmission lines, suggested in dicta that Michigan’s RPS, in favoring in-state renewable resources, might be constitutionally problematic. The court did not, however, actually rule on the constitutionality, nor did the parties brief the issue. See *Illinois Commerce Comm v. FERC*, No. 11-3421 (7th Cir., June 7, 2013). The California Public Utilities Commission heard and rejected a Commerce Clause challenge to California’s policies that establish which renewable resources qualify for the state’s RPS requirements. See Public Utilities Commission of the State of California, Decision 13-10-074, *Order Denying Applications for Rehearing of Decision (D.) 11-12-052* (Oct. 31, 2013). We do not evaluate these qualification standards here, but emphasize the more general point that general RPSs appear to be constitutional under the Commerce Clause.

⁸⁵ 793 F.3d 1169, 1170-71 (10th Cir. 2015).

⁸⁶ 793 F.3d 1171 (“Colorado consumers receive their electricity from an interconnected grid serving eleven states and portions of Canada and Mexico.”)

⁸⁷ 793 F.3d at 1171 (“Because electricity can go anywhere on the grid and come from anywhere on the grid, and because Colorado is a net importer of electricity, Colorado’s renewable energy mandate effectively means some out-of-state coal producers, like an EELI member, will lose business with out-of-state utilities who feed their power onto the grid. And this harm to out-of-state coal producers, EELI says, amounts to a violation of one of the three branches of dormant commerce clause jurisprudence.”)

Generation Act.⁸⁸ The Court of Appeals rejected the arguments, holding that the Colorado RPS did not discriminate against out-of-state producers and did not regulate extraterritorial prices.⁸⁹ California's RPS policy would likely similarly survive a general constitutional challenge.

To sum up, thus far, courts that have considered Commerce Clause challenges to state climate policies have generally upheld them, with the exception of the Eighth Circuit decision in *North Dakota v. Heydinger*. We do not believe that the *Heydinger* court's reasoning would extend to California's policies, as described above. California's policies appear to be well-insulated from constitutional challenge. Most important for this memo, the expansion of CAISO to include Pacific Corp does not change this analysis.

Conclusion

Although the questions involving state and federal jurisdiction over electricity markets and the constitutional validity under the Commerce Clause of state environmental regulation of electricity are complex, our bottom-line conclusion is straightforward: The expansion of CAISO to include PacifiCorp as a participating transmission owner does not change either California's authority over energy and environmental matters or the constitutionality of its energy and environmental policies. CAISO is already regulated by FERC as a public utility, and California's environmental and clean energy policies affecting the electricity sector are already subject to the Commerce Clause because the state's electricity crosses interstate borders. Adding PacifiCorp assets to CAISO will not create any new or additional risk of preemption for California's energy and environmental policies. Nor will it alter the constitutionality of those policies.

⁸⁸ 793 F.3d at 1172.

⁸⁹ 793 F.3d at 1174 (“But whatever doctrinal pigeonhole you choose to place them in, we don't see how *Baldwin*, *Healy*, and *Brown-Forman* require us to strike down Colorado's mandate. For that mandate just doesn't share any of the three essential characteristics that mark those cases: it isn't a price control statute, it doesn't link prices paid in Colorado with those paid out of state, and it does not discriminate against out-of-staters.”)

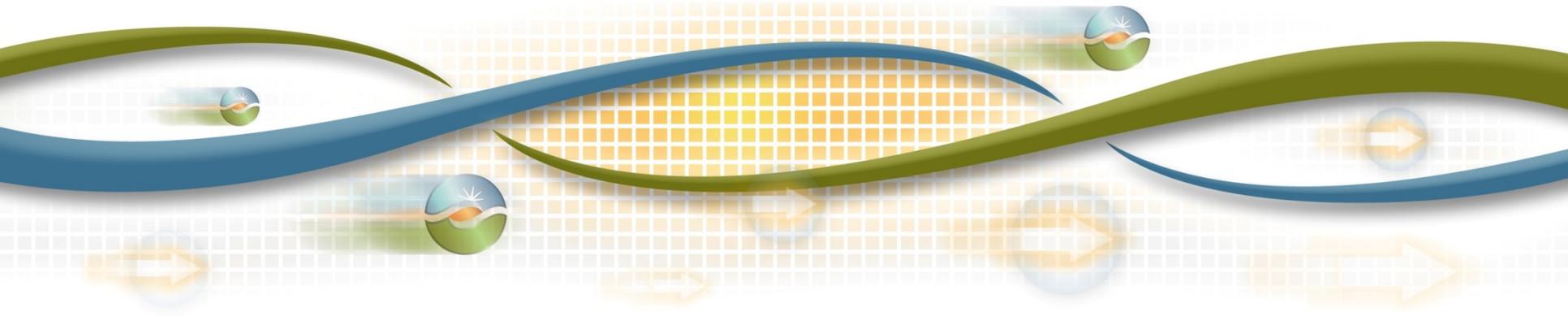
Appendix C

*Excerpts from the ISO's presentation on extended day-ahead market options:
2018 Draft Policy Initiatives Roadmap*



2018 Draft Policy Initiatives Roadmap

Market and Infrastructure Policy
December 14, 2017



Day-ahead market enhancements address net load curve and uncertainty previously left to real-time market

- 15-minute scheduling granularity
 - Ensures day-ahead market commits resources with sufficient ramping capability
- Day-ahead flexible reserve product
 - Compensates resources for must-offer obligation in real-time market to address net load uncertainty
- Combined IFM and RUC
 - Increase efficiency by simultaneously clearing bid in demand and balancing area net load forecast
 - Allow RUC to decommit resources
- Full network model phase 2
 - Improved modeling of intertie transaction sources/sinks

Extending DAM to EIM Entities provides additional regional benefits

- Key benefits:
 - Allows EIM participants to take advantage of day-ahead market enhancements
 - Day-ahead unit commitment and scheduling across larger footprint improves market efficiency and more effectively integrates renewables
- Key principles:
 - Each balancing authority retains reliability responsibilities
 - States maintain control over integrated resource planning
 - Resource adequacy procurement decisions remain with local regulatory authority
 - Transmission planning and investment decisions remain with each balancing authority and local regulatory authority

Scope of stakeholder initiative to extend day-ahead market to EIM Entities

- **Aligning transmission access charge (TAC) paradigms**
 - Ensure EIM Entities recover transmission costs consistent with existing bilateral transmission framework
 - Consistent billing determinants across day-ahead market footprint for market efficiency
- **Congestion revenue rights over expanded footprint**
 - Congestion hedging similar to CAISO balancing area
 - Address long-term bilateral transactions within expanded day-ahead market footprint
- **Day-ahead resource sufficiency evaluation**
 - Ensure balancing areas not leaning on others for capacity, flexibility or transmission

Scope of stakeholder initiative to extend day-ahead market to EIM Entities (continued)

- Transferring bid range
 - Facilitate monthly/daily/hourly bilateral transactions across expanded day-ahead market footprint
 - Used to help meet resource sufficiency evaluation using resources outside a balancing area
- Day-ahead GHG attribution
 - Extend EIM real-time market approach to day-ahead

CERTIFICATE OF SERVICE

I hereby certify that I have on this 3rd day of January 2018, caused to be served by electronic service a true and correct copy of *Comments of the California Independent System Operator Corporation* on each of the following in Public Utilities Commission of Nevada Proceeding No. 17-10001:

Public Utilities Commission of Nevada Official Service List

Regulatory Operations Staff
1150 E William Street
Carson City, NV 89701
service.list@puc.nv.gov

Brad Nelson
Infinite Energy Inc.
7001 SW 24th Avenue
Gainesville, FL 32607
bnelson@infiniteenergy.com

Kamila Serwin
Customized Energy Solutions
1528 Walnut Street, 22nd Floor
Philadelphia, PA 19102
compliance@ces-ltd.com

Robert Bassett
Starion Energy Inc.
P.O. Box 845
Middlebury, CT 06762
regulatory@starionenergy.com

Angel De Fazio
National Toxic Encephalopathy FDN
P.O. Box 29194
Las Vegas, NV 89126
angel@ntef-usa.org

Angel De Fazio
NV Energy Stop Smart Meters
P.O. Box 29194
Las Vegas, NV 89126
infor@nvestopsmartmeters.info

Angel De Fazio
PUC Watch Dogs
P.O. Box 29194
Las Vegas, NV 89126
infor@pucwatchdogs.com

Angel De Fazio
P.O. Box 29194
Las Vegas, NV 89126
ntefusa@aol.com

Carolyn Turner
Fennemore Craig
300 S. 4th Street, Suite 1400
Las Vegas, NV 89101
cmturner@fclaw.com

Fred Voltz
1805 N. Carson Street, Suite 231
Carson City, NV 89701
Zebedee_177@yahoo.com

Rebecca Wagner
Wagner Strategies
316 California Avenue, #857
Reno, NV 89509
rebwagner@gmail.com

Fred Schmidt
Holland & Hart LLP
377 S. Nevada Street
Carson City, NV 89703
fschmidt@hollandhart.com

Public Utilities Commission of Nevada Official Service List

Katherine Hoffman
Fennemore Craig PC
300 E. Second Street, Suite 1510
Reno, NV 89501
khoffman@fclaw.com

Stacey Rantala
National Energy Marketers Association
3333 K Street, NW2, Suite 110
Washington, DC 20007
srantala@energymarketers.com

Anne Kelly
Ceres Bicep Network
99 Chauncy St., 6th Floor
Boston, MA 02111
goldroberts@ceres.org

Bradley Van Cleve
Davison Van Cleve PC
333 SW Taylor Street, Suite 400
Portland, OR 97204
bvc@dvclaw.com

David Norris-BCP
Bureau of Consumer Protection
100 N. Carson Street
Carson City, NV 89701
dnorris@ag.nv.gov

Dylan Sullivan
Natural Resources Defense Council
111 Sutter Street, 21st Floor
San Francisco, CA 94104
dsullivan@nrdc.org

Greg Patterson
Arizona Competitive Power Alliance
916 W. Adams, Suite 3
Phoenix, AZ 85007
greg@azcpa.org

Craig Goodman
National Energy Markets Association
895 Roberta Lane
Sparks, NV 89431
cgoodman@energymarketers.com

Greg Bass
Calpine Energy Solutions, LLC
401 West A Street, Suite 500
San Diego, CA 92101
greg.bass@calpinesolutions.com

Barry Gold
AARP
5820 S. Eastern Ave., Suite 190
Las Vegas, NV 89119
bgold@aarp.org

Brendan Bussmann
Americans of Electricity Choice
233 S. 13th Street, Suite 800
Lincoln, NE 68508
bbussmann@afechoice.com

Deanne Odell
Eckert Seamans
213 Market Street, 8th Floor
Harrisburg, PA 17101
dodell@eckertseamans.com

Ernest Figueroa
Bureau of Consumer Protection
100 N. Carson Street
Carson City, NV 89701
bcpserv@ag.nv.gov

Jennifer Gardner
Western Resources Advocates
150 South 600 E, Suite 2A
South Lake Tahoe, CA 84102
Jennifer.gardner@westernresources.org

Public Utilities Commission of Nevada Official Service List

Jennifer Taylor
Boyack Orme and Anthony
7432 W. Sahara Ave.
Las Vegas, NV 89117
jen@boyacklaw.com

Jessica Scott
Vote Solar
360 22nd Street, Suite 730
Oakland, CA 94612
jessica@votesolar.org

Keith Den Hollander
Christian Coalition of America
P.O. Box 37030
Washington, DC 20013
keith@cc.org

Matt Griffin
Energy Choice Initiative
401 S. Curry Street
Carson City, NV 89703
matt@g3nv.com

Myraleigh Alberto
Davison Van Cleve PC
125 Reno Avenue, Suite B8C
Las Vegas, NV 89119
maa@dvclaw.com

Natara Feller
Feller Law Group
159 20th Street, Suite 1B
Brooklyn, NY 11232
natarafeller@feller.law

Richard Paez
Infinite Energy
P.O. Box 105247
Atlanta, GA 30348
rfpaez@infiniteenergy.com

Jesse Wadhams
Fennemore Craig
300 E. 2nd Street, Suite 1510
Reno, NV 89501
jessew@fclaw.com

Joshua Weber
Davison Van Cleve PC
333 SW Taylor Street, Suite 400
Portland, OR 97204
jdw@dvclaw.com

Lucas Foletta
McDonald Carano Wilson LLP
100 W. Liberty Street, 10th Floor
Reno, NV 89501
lfoletta@mcdonaldcarano.com

Michael Greene
NV Energy
6100 Neil Road
Reno, NV 89511
mgreene@nvenergy.com

Nancy Kelly
Western Resources Advocates
9463 N. Swallow Road
Pocatello, ID 83201
nancy.kelly@westernresources.org

Pam Kiely
Environmental Defense Fund
2060 Broadway
Boulder, CO 80302
pkiely@edf.org

Robert Johnston
Western Resource Advocates
550 W. Musser Street, Suite H
Carson City, NV 89703
Robert.johnston@westernresources.org

Public Utilities Commission of Nevada Official Service List

Sarah Propst
Interwest Energy Alliance
P.O. Box 8526
Santa Fe, NM 87504
propst@interwest.org

Thomas Perrigo
City of Las Vegas
495 S. Main Street
Las Vegas, NV 89101
tperrigo@lasvegasnevada.gov

Vicki Sandler
Azisa
14402 S. Canyon Drive
Phoenix, AZ 85048
vicki_sandler@apses.com

Eric Blakey
Just Energy
5251 Westheimer Road, Suite 1000
Houston, TX 77056
eblakey@justenergy.com

Herb Roberts
Pogo Energy
5215 N. O Connor Blvd., Suite 630
Irving, TX 75039
herb.roberts@pogoenergy.com

Jeffrey Levine
Engie North America
2005 Delancey Pl
Philadelphia, PA 19103
jeffrey.levine@na.engie.com

Jeremy Susac
Lennar Ventures
700 NW 107th Ave
Miami, FL 33172
jeremy.susac@lennar.com

Terry Page
Enel Green Power North America Inc.
1755 E. Plumb Lane, Suite 155
Reno, NV 89502
terry.page@enel.com

Tom Polikalas
Southwest Energy Efficiency Project
P.O. Box 187
Reno, NV 89509
tpolikalas@swenergy.org

Edward Ross
Direct Energy
919 Congress, Ste 1300
Austin, TX 78701
edward.ross@directenergy.com

Hank James
Nevada Rural Electric Association
1894 E. William Street, Suite 4222
Carson City, NV 89701
hjames@nrea.coop

Jay Obryant
IGS Energy
6100 Emerald Parkway
Dublin, OH 43016
jobryant@igsenergy.com

Jennifer Coleman
Columbia Utilities Power LLC
8751 18th Avenue
Brooklyn, NY 11214
regulatory@columbiautilities.com

John Holtz
NRG Energy Inc.
3711 Market Street, Suite 1000
Philadelphia, PA 19104
john.holtz@nrg.com

Public Utilities Commission of Nevada Official Service List

Kirsten Vanry
Office of the Lt. Governor
555 E. Washington Ave.
Las Vegas, NV 89101
kvanry@ltgov.nv.gov

Marguerite Patrick
Infinite Energy Inc.
7001 SW 24th Avenue
Gainesville, FL 32607
bpatrick@infiniteenergy.com

Matt Morris
Office of the Governor
101 N. Carson Street
Carson City, NV 8971
mmorris@gov.nv.gov

Michael Harwell
Clark County Business License
500 S Grand Central Parkway, 3rd Flr.
Las Vegas, NV 89155
mikeh@clarkcountynv.gov

Omar Saucedo
LVVWD
1001 S. Valley View Blvd.
Las Vegas, NV 89153
omar.saucedo@lvvwd.com

Ryan Cherry
9545 Stony Hill Road
Reno, NV 89521
nv.rcherry@gmail.com

Saeed Farrokhpay
Federal Energy Regulatory Commission
1835 Iron Point Road, Suite 160
Folsom, CA 95630
saeed.farrokhpay@ferc.gov

Scott Bensing
SB Strategic Consulting Inc.
1 E. Liberty Street, Ste. 444
Reno, NV 89501
sbensing@sbstrategic.com

Sean Spitzer
11348 Altura Vista Drive
Las Vegas, NV 89138
seanspitzer@hotmail.com

Steven Boss
Boss Law
5956 Sherry Lane, Ste. 1000
Dallas, TX 75225
stevenboss@stevenbosslaw.com

Tony Cusati
IGS Energy
1379 Butter Churn Drive
Herndon, VA 20170
tony.cusati@igs.com

Alvin S. Pak
Law Offices of Alvin S. Pak
827 Jensen Court
Encinitas, CA 92024
apak@alpaklaw.com

Dated this 3rd day of January 2018, at Folsom, California.

By: /s/ Grace Clark
Grace Clark, Paralegal
California Independent System Operator Corporation
250 Outcropping Way
Folsom, CA 95630